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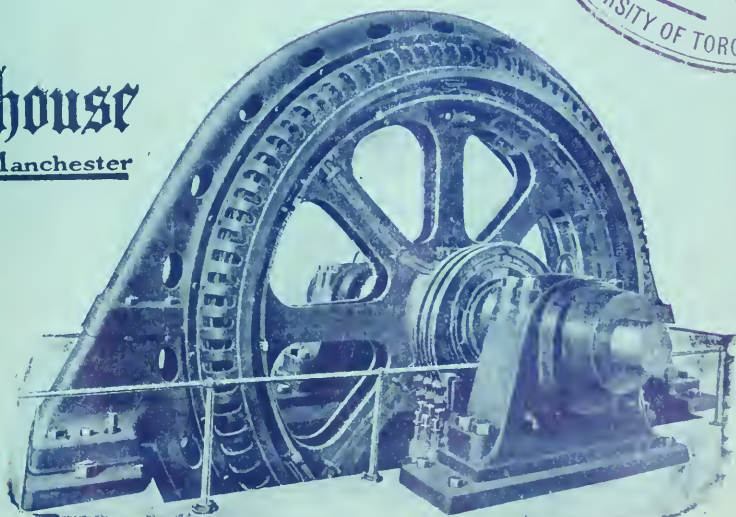
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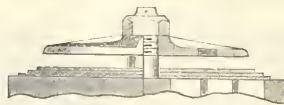
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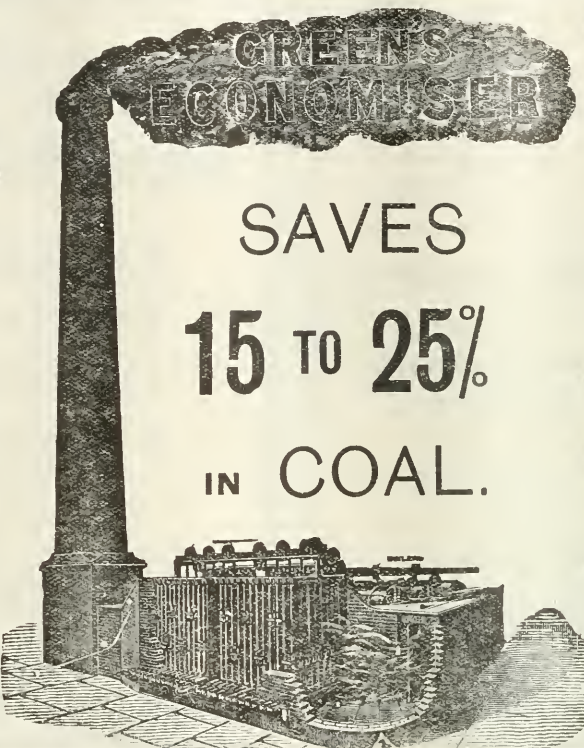
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Notes and News.

The report of the Select Committee on the Far East Rand was laid on the table of the House this week, and the debate on it was fixed for next Wednesday. We understand that its recommendations follow the lines of Mr. Kotze's report, the Rand members having successfully combated the idea that the Government should themselves embark on the always speculative business of gold mining. A suggestion made before the Select Committee that the Government should have the right to exchange their share of the profits for a direct shareholding was rejected as involving the State in unbecoming speculation. The Select Committee was much impressed by the evidence led showing that certain Australian mineralized areas had been neglected for four or five decades owing to legislative disabilities alleged to be the fault of the Labour Party. The serious effect of the approaching drop in the Rand output, coupled with the fact that this set-back could only be alleviated by the early development of the Far East was recognised by the Select Committee, with the result that their report will give a very clear-cut and definite lead for immediate action by the Government.

After various deductions amounting in all to £35,721, against £33,097, the accounts of the B.S.A. Explosives for the past year exhibit a net profit of £56,998, or £4,000 less than that earned in 1914. As for several preceding years, the dividend is to be $7\frac{1}{2}$ per cent., subject to British income tax, provision having been made for the South African tax. At £58,674 the carry-forward will be £6,500 larger. The company has thus surmounted the difficulties of the year with a considerable amount of success. Owing to the war the sales of explosives to the Transvaal were reduced, but the deficiency was largely made good by the increase in the overseas deliveries.

At the meeting of the Namaqua Copper Co., according to a *Times* report, Mr. T. V. Anthony, a director, stated that the world's production of copper in 1915 was estimated to have been a little in excess of 1,000,000 tons—of which the United States were responsible for some 635,000 tons—and a recent estimate put the present rate of the world's output at 100,000 tons a month. To-day they were face to face with a position for which no parallel could be found in the history of the metal—on the one hand a production far in excess of anything ever hinted at hitherto, and, on the other hand, a price which had not been reached within the memory of any of those present, and, what was still more phenomenal, no visible limit to either. He would, indeed, be a bold man who would venture to predict the point to which prices might yet be taken, in view of the undoubted fact that, huge as the production had become, consumption was keeping pace with it and could hardly be relaxed so long as the war endured—a comforting reflection for producers like themselves, however much it was to be regretted that the result had not been attained by other means.

All-round progress continues to be the watchword of the Rhodesian mining industry. The returns for the month of April, which were issued this week, give a grand total value, including adjustments, of £126,194, as compared with £385,207—which also included similar adjustments—during the same month of last year. The returns for the first four months of the current year are now £151,706 ahead of those for the corresponding period of 1914, the increments being distributed over gold £111,960, copper £11,700, coal £10,731, chromite £11,327, asbestos £19,534, and silver £1,519. The actual increase in the gold, as compared with April, 1915, is given at 4,979 ounces, and

for the four months 26,203 ounces. This is principally due to the expansion of the producing list in the Bulawayo and Gwelo districts, several new producers, such as the Long John with 566 ounces, Elizabeth with 125 ounces, and Jessie with 172 ounces, being features of interest in the former district, while in the latter district small workers are again making their influence felt on the output. The Mashonaland areas continue to keep up their yields to an average far in advance of that of 1915. The old Jumbo Mine, in the Mazoe district, declares what is presumably a final clean-up, after a career extending over thirteen years, during which nearly £700,000 in gold has been won from the mine. It has been known, however, for some years past that hope was given up as regards the prospects of this mine in depth, and the effect of its departure from the producing list will not be seriously felt, it having been quite a modest producer for some time past. The *Bulawayo Chronicle* states that other mines, e.g., the Connemara in the Gwelo district, are preparing to crush on a fairly large scale, while the renewal of activity among the small workers gives additional promise of increased production.

The directors of the Globe and Phoenix Gold Mining Co., Ltd., had hoped to be able to report at the annual meeting the result of the protracted litigation with the Amalgamated Properties of Rhodesia, but the gathering had to be held without this important crisis in the affairs of the company having been settled. Indeed it seems hardly likely now that Mr. Justice Eve will deliver his judgment before July, and even then we should not be surprised to see the case carried to the Court of Appeal. Meanwhile the cost of the litigation bulks largely in the accounts of the company for 1915. Had it not been for this factor and the incidence of the war the directors state that "the earnings would have been entirely normal and satisfactory." As a matter of fact, however, the grade of the ore dealt with fell off somewhat and the working profit declined to £239,000, against nearly £300,000 for 1914. Nearly £48,700 has been written off for "John Bull litigation expenses," against only £4,350 a twelvemonth ago, while the profits held in reserve for the result of the case have grown to £102,000—the two items just mentioned representing a total of about 8s. 9d. per share. Consequently the directors have only been able to pay two dividends aggregating 2s. per share, against four amounting to 6s. for 1914. There is just over £6,000 to be carried forward, against £11,200 brought in. Pending the litigation the directors prefer to give us fresh information as to developments in the mine, but at March 31, 1915, there were not far short of three years' ore reserves opened up. Various improvements in working and treatment methods are under consideration.

Considerable interest has been aroused among holders of shares in South African gold mining companies resident in Great Britain by the intimation that the Chancellor of the Exchequer had accepted the view of the Union Government that the Mining Taxation Act could be regarded in principle as an income-tax measure. According to the London papers, this is a concession of substantial benefit to British shareholders, as it means, according to responsible quarters associated with the industry, that from dividends derived from South African mining investments by shareholders resident in this country, income tax will henceforth be deducted at the rate of 3s. 6d. instead of 5s. in the £. Revenue obtained from gold mining companies by shareholders resident in South Africa has never been subject to the Union income tax proper, as it is recognised by the authorities there that the profits tax, which, with the special war levy, amounts to something like 2s. 6d. in the £, answers the same purpose. Mr. McKenna has now agreed to recognise income tax paid in any of the British Colonies as a legitimate deduction from income tax payable in Great Britain to the extent of 1s. 6d. in the £. Hitherto, no concession has been granted British shareholders in this direction, who have had to pay full rates on their dividends, notwithstanding the imposts levied by the Union Government, an obviously unfair method of procedure. To tax British shareholders at the rate of 5s. in the £ on dividends

declared out of profits already subjected to the Union profits tax and war levy would doubtless constitute a great hardship, and the concession which Mr. McKenna has seen fit to grant, in deference to the views of the Union Government, represents the very tangible relief of 1s. 6d. in the £. The welcome innovation now announced is doubtless due to the high rate of taxation prevailing consequent on the war. Apart from the benefit the departure bestows on shareholders, it removes a restriction to the employment of British capital in South Africa.

Volume 8 of the "Mining World (Chicago) Index of Current Literature," price 8s., has reached us. The Index covers the period from July to December, 1915, and is as thorough and as indispensable as ever. But few changes

have been made in this volume of the work, and these only of a minor nature. The increasing importance of flotation has brought out considerable matter on this present-day development and all articles treating of the subject have been placed under a separate head. Several other departments have undergone a closer classification. As in previous volumes the world's literature on mining, metallurgy and kindred subjects appearing in periodical magazines published in America, Europe, Africa and Australia, have been arranged in classified form. These articles cover mining, engineering, metallurgy, geology, mineralogy, etc. There is also included papers read before institutes and affiliated engineering and technical societies, as well as reports of Federal and State Geological Surveys and Mining Bureaus at home and abroad and new books. By the system of cross-indexing adopted what is wanted on any mining or affiliated subject is readily found. A brief digest of all articles is given so that a general idea of the article may be obtained. The work may be obtained direct from the publishers.

In a paper full of interest, not only from a technical but from a philological and literary point of view, which was read by J. de Fenton, Ph.D., on Saturday evening last, before a meeting of the Chemical, Metallurgical and Mining Society, it was shown that although miners' phthisis is commonly spoken of as quite a recent type of disease, it is in reality a sickness with a fairly long, if fragmentary, record. Pliny the Elder refers to respirators, and long before him Hippocrates, the Greek, spoke of the metal digger who breathed with difficulty and was of a pale, wan complexion. But it is not till we reach the days of Agricola, as Dr. de Fenton tells us, that we get what may be called a real practical diagnosis of miners' phthisis. There is no question of the identity of the disease, as Agricola studied it nearly four hundred years ago in Bohemia and as it prevails to-day in the mines of the Rand and elsewhere. For this reason the description of it in Agricola's famous book, "De Re Metallica," is of special interest to us. Until four years ago no translation of the work into the English tongue appears to have been made; but in the year 1912 one was published by Mr. and Mrs. Hoover. Since it became necessary to study what Agricola actually had to say with regard to miners' phthisis, a careful comparison of the translation with the original work was made, with the result, we learn that the former leaves something to be desired. It was mainly from this point of view of accuracy that Dr. de Fenton dealt with the matter in hand on Saturday evening last, and with his exceptional and wide knowledge of grammatical construction and word values in Latin it is not to be surprised at that he established a strong case against certain renderings of Mr. and Mrs. Hoover. The translators state it to be one of the three objectives in a work of this kind "to give a faithful, literal translation of the author's statements." The following extract relating to phthisis may be taken as an example of rendering into English to which Dr. de Fenton rightly takes exception. Mining is said to be a perilous occupation because, amongst other reasons, "metallorum fossores . . . laurientes pulverem pulmones exulcerantem, macie extabescunt." The Hoover translation says briefly for this: "their lungs rot away," which is quite unsatisfactory from a medical no less than from a literary point of view.

TOPICS OF THE WEEK.

COMPANY MEETINGS OF THE WEEK.

It would be impossible this week to do justice to all the points brought out in the speeches from the Chair at the annual meetings of the past ten days. Full reports of the proceedings will be found in this issue, and shareholders will note that the speeches not only review the operations for 1915 but supplement that information with an account of results down to date. In this way they are more than compensated for the delay in holding the annual general meetings. The companies thus reviewed in this issue include the Barnato group, the Abu group, the Consolidated Mines Selection group, and the New Kleinfontein and Nigel. The meetings of the subsidiaries of the Johannesburg Consolidated Investment Company were of a particularly satisfactory nature. The position of the Government Areas was shown to be improving every day, and no mine of its class on the Rand now holds out higher hopes for the future. Van Ryn Deep likewise makes an excellent showing, and the Consolidated Langlaagte continues to realize the highest expectations. Indeed all the mines of the group continue to give evidence of the soundest management, and to justify the confidence expressed by Mr. S. B. Joel in his memorable speech some months ago at the meeting of the "Johnnies" Company. Should the Union Government, with the sanction of the Legislature, decide to modify the terms of the State Mines lease, on the lines which Mr. Inroth was able to prove must directly and chiefly benefit the State, the work of the past five years will be fittingly crowned and rewarded.

As the pioneers of the Far East Rand the "C.M.S." people naturally were in cheerful mood at the annual meetings of their prosperous subsidiaries. Mr. Lynch, who presided, would not have been human if he omitted to remind his hearers of the big part played by the group in blazing the trail in the Far East. The signal successes won both by the Brakpan and Springs Mines in that district will constitute one of the most memorable chapters in the history of Rand mining when it comes to be written, and the invaluable pioneer work done by the "C.M.S." must not to-day be forgotten.

Though mainly concerned with the Central and Western areas of the Rand, the meetings of the Abu subsidiaries were equally satisfactory. A welcome surprise has been furnished by the excellent developments in depth of the Rooipoort United, and though a change in the fortunes of that company was foreshadowed in these columns some time ago, the improvement has outstripped expectations. All concerned—the house that financed the property through the dark days, no less than the manager who pluckily fought the bad luck of the mine—are to be congratulated on the latest turn of events. The Cinderella, true to its name, has shown itself, if we are to accept Mr. George Denny's report at its face value, a much maligned and misunderstood property of great potentialities. Mr. Denny has the reputation of being a most careful and conscientious engineer, and time, of course, will confirm or refute the soundness of his report. At any rate, it brings appreciably nearer the day when the removal of the present financial disabilities will give the property the opportunity to realize its possibilities.

At the New Kleinfontein meeting, Col. Dalrymple was cautiously hopeful in his references to the future, but his speech shows that the enlarged property should soon come into its own, despite all unfavourable rumours. In this regard his remarks on the dividend question are particularly notable. At the Nigel meeting, which as usual was held at Pietermaritzburg, it will be seen that shareholders were given ground for hope regarding the future. A Rand mine, we know, dies hard, and there may be a great deal of life and profit left in the old Nigel yet, despite the mistakes and ill-luck of the past. Not all the main features of the meetings can be dealt with in this brief notice. *Littera scripta manet*; and the present prolific crop of speeches will furnish us with themes of interest for many weeks to come.

MINING AND THE WAR.

The two aspects of the war as it affects the industry that have been most prominent at the recent Rand company meetings are the increased cost of supplies and the splendid numerical response made by the mine employees to the call for men. Both these phases of the great conflict are too familiar to our readers to call for further emphasis from us. A third has lately been impressed upon mining circles in London by the new President of the Institution of Mining and Metallurgy, Sir R. A. S. Redmayne, who took for the subject of his recent inaugural address the title, "The British Mining Industry in Relation to the War." That address, we understand, has given food for thought to at least one of the bodies in this country concerned with the effect of the war on local industry, and for that reason, if for no other, it may be profitable to examine Professor Redmayne's thesis. One result of the war is, he thinks, obvious: it will be followed by a period, longer or shorter, of industrial depression, amounting possibly to something like prostration, but he believes, also, that we have it within our power to remedy matters in a comparatively short period, and "to put the nation on a stronger financial and industrial basis than ever before in its history. We must take time by the forelock and make our plans now." In this connection, reference is made to the opinion of so great an authority on matters of industry as the President of the Board of Trade, who, in a remarkable and inspiring speech delivered in the House of Commons on the 10th of January last, said:—

"Recuperation is undoubtedly, and will be, one of the first necessities of the whole of Europe"; again, "The exhaustion from which all the belligerents will undoubtedly suffer will lead to a period of great effort, and I hope in all of them—I say without distinction 'in all of them' to a greater degree of recuperation"; and again, "I believe we have it within our capacity to make up for the vast losses which we have incurred in a shorter period of time than any other State."

On this Sir Richard Redmayne comments: "The President spoke of industrial enterprise in general, but mining, which is our second greatest industry—for I suppose we must put agriculture first—should be made to contribute more to industrial regeneration and advancement. The war has emphasized one outstanding fact, viz., that we should and could approximate more closely to the ideal state of being self-supporting; in other words, develop to the utmost our natural resources and put them to the most economical use at home." The application of all this to South Africa is obvious. He proceeds: "Great Britain, and more especially England, is the most highly mineralized area in the world. No other country contains such a variety of mineral resources of use to mankind, not even the United States of America. Other countries may contain vastly greater quantities of one or more of the useful minerals, but no country so many and so varied. If we extend our view and take in the whole British Empire, there is no fuel, ore, stone, or clay which is not contained therein. Mr. Runciman has said: 'There should be no essential article, either for the arts of peace or for the arts of war, upon which we cannot within the Empire lay our hands.' It behoves us, therefore to know exactly where we stand in respect of our mineral resources; where the different kinds of minerals occur, of what quality, and to what extent. A great deal of information exists on the subject in the *Transactions* of various Technical Institutions, in geological memoranda, and in reports on mining properties, which, in the hands of a body of mining experts, could be summarized so as to form part of a large work resulting from further inquiry and investigation. Would not the services of our Institution be of value in the prosecution of such an idea?" Proceeding to deal with the necessity for research work, Sir Richard says:—In respect of some of our ores there is room for improvement in the methods of extraction of the ore from the gangue or stone, and the economic reduction of the ore to the metal. The decision of the Advisory Council to the Committee of Scientific and Industrial Research of the Privy Council, to make a grant in aid of the Research which the Institution of Mining and Metallurgy and the Royal Corn-

wall Polytechnic Society are conjointly about to carry out in respect of the economic production of tin and tungsten, with special reference to Cornwall, is a welcome sign of the national awakening which is taking place as to the overwhelming importance of scientific and industrial research. The investigation will be a work of very great utility, and should have far-reaching results, and will probably lead to a still wider investigation, viz., into the economic recovery of various "associated" minerals. Sir Richard alluded to the connection with the Council of Scientific and Industrial Research and of the Institute of Mining and Metallurgy, and quoted several expressions of faith from the Memorandum, setting forth the question of research, which was issued by the Board of Education on the 23rd July last. He added:—

"That these are no mere empty expressions of opinion is shown by the action taken by the Council of Scientific and Industrial Research in assisting our proposed scheme of investigation on tin and tungsten. And sentiment has been still further translated into action by a proposal to set up committees of experts in certain branches of industry to advise the Council for Research on matters relating to these industries. In connection with the industries of mining and metallurgy, it has decided to set up a committee to deal with (a) the mining of non-metals, (b) metalliferous mining, and a committee for metallurgy dealing with (a) the metallurgy of non-ferrous metals and (b) the metallurgy of iron and steel, and has requested our Council to nominate two members to serve on the Metalliferous Mining Committee and two to serve on the committee relating to the metallurgy of non-ferrous metals, a request to which we have very willingly acceded. The action of the late President of the Board of Education in securing the appointment of the Advisory Council to the Committee of the Privy Council to ascertain the best methods of securing the organisation and development of Industrial and Scientific Research marks a welcome development, and may lead to great strides being taken in our industrial methods. But it is not sufficient to organise industry and inaugurate research if we have not the material in the shape of highly trained persons to undertake research work, organise and captain industry. Great improvements in our educational system have been carried out during the last twenty years. One has only to point to the rise of the provincial universities with their great Applied Science departments to instance this, but we are still behind some of our continental neighbours; the modern side of our public schools is not what it should be, and the cost of our higher education generally is excessive. Sir James Dewar, in his Presidential Address to the British Association in 1902, said that 'the really appalling thing is that the German population has reached a point of general training and specialised equipment which will take us two generations of hard and intelligently directed educational work to attain. It is that Germany possesses a national weapon of precision which must give her an enormous initial advantage in any and every contest depending upon disciplined and methodical intellect.' I think the nation does now realise the effectiveness of the weapon possessed by Germany. If this great war has not brought this home to us nothing else will."

Plainly, there is a great deal in Sir Richard Redmayne's address that may profitably be taken to heart in this country.

PROGRESS WITH THE CENTRAL MINING-RAND MINES SUBSIDIARIES.

The batch of Corner House quarterly reports for the first three months of 1916, issued this week, presents several interesting features. Most of these features will doubtless be dealt with at the forthcoming annual meetings, and we will content ourselves, therefore, with merely mentioning them. At the Crown Mines the working profit for the quarter, compared with the first quarter of last year, shows a reduction of £59,952, due to increased development, decreased tonnages and high costs. The expenditure on development during the quarter totalled £59,471, against £80,954 for the first quarter of 1915. For some years past there has been a considerable amount of discussion on the possibility of improving the grade by narrowing the stoping widths. In order to arrive at a definite conclusion on this point, the management has since last October been gradually substituting hand for machine stoping, so that in March the proportion of rock broken by hand was 56·3 per cent. of the total tonnage stoped, as compared with 14·7 per cent. in the first quarter of 1915. The widths have been substan-

tially narrowed, and the average yield per ton increased by 5 dwt. As, however, it was found impossible to stope as large a fathorage, even when working thirty-seven additional faces, the tonnage milled per month has fallen; the total cost of production has been greater and the total yield has been less by the amount of recoverable gold contained in the hanging bands left behind and in the larger area previously stoped. Consequently, the net result has been a considerable reduction in the profits earned. The management is now gradually reverting to the former method of working. The net expenditure on capital account during the quarter amounted to £16,052. The native labour force at the end of the quarter was 16,569, as compared with 18,742 at the end of December, 1915. At the New Modder the quarter's operations showed a small increase in the tonnage milled and a corresponding increase in profit. Development operations were resumed in the circular shaft section, and are being pushed ahead from all available points of attack. The capital expenditure for the period totalled £47,702. At the Modder B. the profit for the quarter averaged 25s. 7d. per ton milled and £58,420 a month, or slightly less than in the preceding quarter. Working costs showed an increase of 1s. 2d. per ton milled, partly owing to all development being directly charged to working costs, and partly to influences created by war conditions. Development operations were well maintained, with promising reef disclosures. Capital expenditure for the quarter amounted to £1,841. At the Ferreira Deep development operations continued normally, but the South Reef values met with were low on account of the advance being carried out in areas of known poor grade. The work of reorganisation at No. 2 shaft continued, and connections were completed between the second and third and the third and seventh levels; stripping of the shaft to full size and timbering is now proceeding. The decreased profit for the quarter is due both to the reducing grade following the further gradual transference of the greater proportion of stoping to the poorer No. 1 shaft section of the mine, as well as to the heavy expenses being met at the present time out of working costs for the No. 2 shaft reorganisation scheme. Native labour, although not as plentiful as in the preceding quarter, is still sufficient for the mine's requirements. At the Village Deep the profit for the quarter showed a reduction of £12,711, owing to an increase in working costs of 1s. 7d. per ton milled. The increased cost is chiefly due to an increase in wages, abnormal expenditure and conditions brought on by the war. Development operations continue to be pushed forward energetically, with satisfactory reef disclosures. Capital expenditure amounted to £807. At the City Deep, development was normal, 1,910 feet sampled on the Main Reef Leader giving 19·4 dwts. over 27 inches. At the Nourse the profit was £5,495 less than for the previous quarter, owing to a reduction in tonnage milled of 10,400 tons and an increase in working expenditure of 5d. per ton milled. The amount of development was well maintained, without any notable change in the value of the ore exposed. The capital expenditure for the quarter was £3,514, whilst machinery to the value of £236 was disposed of. The expenditure was chiefly in connection with the pumping equipment authorized in the preceding quarter. The authorized unexpended figure now stands at £755. The labour position is satisfactory. At the Durhan Roodepoort Deep increased values in Main Reef were met with during the current quarter as compared with the previous one, but less footage was accomplished on this reef. South Reef values showed a slight decrease, with practically the same footage. The profit shows a further slight improvement, due to the increased tonnage crushed, since although the costs were lower by 6d. per ton the yield dropped by 7d. per ton milled. The native labour position remained practically stationary for the quarter, and the mine has sufficient labour for its present requirements. No capital expenditure was made. The Bantjes report was printed in our last issue. The facts quoted from the quarterly reports will, of course, be reviewed in greater detail at the forthcoming annual meetings.

REEFS SOUTH-WEST OF HEIDELBERG.

A Movement Beyond the Town Lands—Possibility of Abnormal Geological Conditions—The Need for Further Scientific Investigation.

THE district immediately to the south-west of Heidelberg appears to be attracting some attention now that the public is beginning to take the Far East Rand seriously. In the map of the country lying south of the Nigel it will be seen that Dr. Hatch has shown the Nigel horizon, with the several overlying groups of conglomerate, as trending in a general south-west direction, although the Nigel itself, by reason of its comparatively flat dip, follows a somewhat irregular contour. Not much is known of the character of the Main Reef horizon in this particular neighbourhood, although a good deal of spasmodic prospecting has doubtless been carried out there during past years. With the coming into fashion of the Far East, and the knowledge that the occurrence of reef in long and more or less narrow channels is not inconsistent with fairly high values and large workable tonnages, it is likely that an impetus will be given to systematic exploratory work on an adequate scale in this newer region. The facts that the beds lie at low angles of dip and that the outcrops of characteristic horizons may be followed without great difficulty over long distances are elements of some importance from an economical point of view. It is interesting to note, however, that although the much disputed geological problem of the Blue Sky neighbourhood finds no place for discussion here, inasmuch as opinion is generally in agreement as to the existence of a fairly complete and unmistakable section to the south-west of Heidelberg, the argument relating to the identity of the Nigel and Van Ryn reefs seems to have acquired additional data in support of the opposing sides. Mr. Wm. Bleloch, for instance, claims to have found the Van Ryn body on Boschfontein 271, adjoining the Heidelberg town lands, and in the same horizon as he believes it to have been located by him on Varkensfontein. Dr. Hatch, on the other hand, as will have been seen from our reproduction of his map, has described the reef to which Mr. Bleloch evidently refers, as belonging to the Kimberley group.

A FIELD FOR SYSTEMATIC ENQUIRY.

It is unfortunate that the work of the Geological Survey has not continued beyond the Nigel, where such distinctions as undoubtedly exist between the what Dr. Mellor calls normal section of the Witwatersrand and the far south-east section have probably become sufficiently emphasised to deserve more than casual notice. Our knowledge of the country between Boksburg and the Nigel is based upon data of a fragmentary kind at the best, of which the somewhat uncertain and badly recorded evidence of boreholes constitutes a large proportion. Such as it is, the material to hand has been ably pieced together by Dr. Mellor, with the result that we have a fairly satisfactory knowledge of the more prominent geological features of this south-eastern fringe. Just as in the area from Luipaards Vlei to the furthest Randfontein, however, there are local conditions that are not

to be judged entirely in the light of Central Rand experience, so in the region between Varkensfontein, say, and Plat-koppies, or beyond it, it is possible that variations of some importance may be found in the distribution of the profitable ore-bodies. It is precisely in such areas as that under discussion, where what are known as normal conditions no longer prevail, that properly directed enquiry is especially necessary. The same remarks apply with equal force to the long narrow basin of lower and upper Witwatersrand beds which stretches for many miles along the railway and expands towards the Vaal River in the neighbourhood of Hex River. The lamentable history of the Coronation line and the piffling operations that have been carried out from time to time on the Daspoort-Tweefontein line have merely served to bring contempt upon a district that is perhaps deserving of systematic investigation.

THE CHIEF ASSET OF THE STATE.

For some years past the Government, guided by the advice of the Geological Survey staff of the Union, have been engaged in a praiseworthy attempt to direct attention to various parts of the country which might offer inducements to mining enterprise. Experience has shown the futility of the proceeding. The vast auriferous areas of Lydenburg and the valuable tin producing grounds of the Bushveld, to quote no other fields of economic importance, are still comparatively neglected. The Witwatersrand continues to attract all the available capital, and will doubtless continue to do so until the State itself takes some more active part in fostering small ventures. The Witwatersrand system is, meanwhile, the outstanding asset of the country and should be exploited to the uttermost, not only because it has a very evident value, but because we know very well how to deal with it. Technical experience has been acquired in abundance and the whole business of gold mining on the Rand has been brought down to a commercial level with practically no scientific problems worth speaking of. In the circumstances, then, the need of the moment is to enlarge the area of gold mining, under these favourable conditions, as much as possible, and one way of doing it is by continuing the work of the Geological Survey, and expanding its scope, in the still uninvestigated districts. If Mr. Hall, for example, or Dr. Humphrey, or both of them, could be withdrawn from the work of describing the geology of those parts of the Union which are apparently of no great interest to anyone with money to spend, and could be established in Heidelberg or Klerksdorp, or some other likely place, in order to carry on and complete Dr. Mellor's excellent work, the small amount of money which is so grudgingly spent on the Department of Geology might secure more immediate and useful results. It is an argument that was put forward by the *S.A. Mining Journal* several years ago, before the Witwatersrand problems were taken in hand, and is sufficiently sound to be urged again in the present circumstances.

Manicaland Output.

The mineral output of the Territory of the Companhia de Mocambique (Manicaland) for the month of April, 1916, is as follows:—Reef: Mill: Gold won (fine), 15 ozs. 1 dwt. 10 grs.; tons crushed, 235; value, £62 8s. 8d. Cyanide and Concentrates: Gold won (fine), 90 ozs. 19 dwts. 10 grs.; tons, 333; value, £377 2s. 2d. Alluvial: Gold won (fine), 843 ozs. 8 dwts. 5 grs.; cubic metres dredged, 69,530; value, £3,496 5s. 3d.

Moodies—Blackmore: Successful Appeal.

In the Supreme Court, Pretoria, on Tuesday, the appeal was heard of Moodie's G.M. Exploration Company *versus* S. P. Blackmore. Mr. Stratford, K.C., and Mr. S. Solomon for appellants; Mr. Langerman

for respondent. Appeal from judgment of the Magistrate at Barberton in a claim by plaintiffs (appellants) for rent due under a lease dated July 14th, 1905, for a period of nine and three-quarter years. Rent was paid to July 14th, 1909, but payment was refused from that date up to April, on the ground that the lease was cancelled by virtue of Section 67 of Act 35 of 1908, that there was an admission by plaintiffs to that effect, and that the dispute should go to arbitration under an arbitration clause. The amount claimed was £57 10s., in respect of the period from July 14th, 1909, to April, 1915. From the finding of the Magistrate upholding exceptions and dismissing the claim appeal was brought. After hearing arguments the Court held that there was nothing in the Gold Law to warrant the conclusion that it was the intention of the Legislature to confiscate the surface rights which private owners who held concessions for minerals had, that the Magistrate's judgment was wrong, and that the appeal must be upheld, and judgment entered to one for the plaintiff (appellant) for the sum claimed.

RAND MINE PROFITS, DIVIDENDS, SHARE PRICES AND YIELDS.

CALCULATIONS TO ENABLE SOME ASPECTS OF EACH SECURITY TO BE ESTIMATED BY THE INVESTOR.

The following is a list of Rand dividend-payers, with the highest and lowest points touched during 1915, the dividends paid for the past year, the total dividends paid by each company, the gross return p.c. (calculated upon the distributions for 1915 or upon double the interim dividends for 1916 in the cases of the Ferreira Deep, Luipaard's Vlei and Wolluter), and other interesting particulars. In the "amount required to pay 10 p.c. dividend" no allowance is made for profits tax or for payments to the Government under bewaarplaatsen leases. In some cases working costs appear to be lower than they really are, owing to the inclusion of sundry revenue in the declared profit. Lives have been omitted, as they naturally vary with the increase in the reduction plant and the quantity of low-grade ore brought within the milling range by the lowering of working costs. The gross return per cent. must, of course, take into account the probable life of the mine which the table makes no attempt to estimate.

Ref. No.	Share.	1915.		Dividends.		Total divs. paid. to 1915.	Balance of profits carried forward at end of last financial year.	Typical Month's Returns, 1916:				Declared profit for 1916 First Quarter, on profits, 1916	Prior charges to pay 10% dividend.	Amount required to pay 10% price. per cent.			
		H.	L.	1914.	1915.			Yield per ton.	Working cost p.t.	March.	Total profit.						
		%	%	%	%	£	£	s.	d.	s.	d.	£	£	£ s. d.			
1	Mining Co.'s.	1 1/2	1 1/2	5	—	119,297	68,721 Dec., '15	20	9	20	8	0	1	58	50,230	16/6	10 2 10
2	Bantjes Consolidated...	3 1/2	2 1/2	30	17 1/2	1,068,750	81,548 Dec., '15	29	6	18	9	10	9	34,329	75,000	3 1/2	31 8 4
3	Brakpan ..	2 1/2	2 1/2	15	7 1/2	2,142,000	Dr. 6,333 Dec., '14	35	4	22	1	13	9	19,103	59,433	1 1/2	8 14 2
4	City & Suburban (£4)	3 1/2	2 1/2	23 1/2	13 1/2	1,093,750	206,948 Dec., '15	38	11	18	10	19	3	61,085	125,000	3 1/2	15 12 6
5	City Deep ..	2 1/2	1 1/2	20	12 1/2	522,500	75,196 Dec., '15	26	1	16	2	0	1	*26,078	95,000	32/-	13 0 0
6	Consolid. Langlaagte	1 1/2	1 1/2	11 1/2	6 1/2	727,190	69,874 June, '15	29	1	20	0	9	1	13,742	92,436	19/3	11 16 5
7	Consolid. Main Reef..	4 1/2	3 1/2	85	35	6,224,332	173,951 Dec., '15	26	11	20	1	6	10	68,286	214,643	24	26 13 4
8	Crown Mines (10/-)	1 1/2	1 1/2	25	10	1,437,583	22,552 Dec., '15	20	0	17	4	2	8	1,950	5,840	1 1/2	10 18 2
9	Durban-Roodepoort ..	1 1/2	1 1/2	7 1/2	3 1/2	275,000	45,221 Dec., '15	26	5	22	8	3	9	5,399	15,451	1 1/2	14 10 4
10	Durban-Roodep't Deep	1 1/2	1 1/2	17 1/2	6 1/2	6,303,727	161,313 Dec., '14	24	0	19	3	4	9	42,010	112,205	15/6	24 16 6
11	East Rand Proprietary	2 1/2	1 1/2	45	25	5,243,750	106,913 Sept., '15	33	6	20	6	13	0	37,291	98,000	1 1/2	4 6 11
12	Ferreira Deep ..	1 1/2	1 1/2	5	5	148,125	168,188 Dec., '15	34	2	22	2	12	0	*15,587	97,000	46/-	4 6 11
13	Geduld ..	1 1/2	1 1/2	18 1/2	10	2,229,340	160,930 Dec., '15	25	9	20	7	5	2	15,923	44,356	1 1/2	30 0 0
14	Geddenhuis Deep ..	3 1/2	2 1/2	17 1/2	7 1/2	487,375	18,654 Dec., '15	32	6	18	0	4	8	*3,637	11,368	10/-	57 2 7
15	Ginsberg ..	3 1/2	2 1/2	5	—	558,750	Dr. 1,575 Dec., '15	13	3	12	4	1	0	*1,059	55,000	1 1/2	14 2 4
16	Glencairn ..	3 1/2	2 1/2	10	7 1/2	1,510,101	131,081 July, '15	11	11	8	3	3	3	*19,211	74,352	1 1/2	15 9 8
17	Knights Deep ..	3 1/2	2 1/2	—	—	2,891,658	6,800 Dec., '15	20	3	15	10	4	5	13,105	88,650	8/6	11 15 3
18	Langlaagte Estate	3 1/2	2 1/2	—	—	99,260	108,057 June, '15	15	6	—	—	3	11	*4,213	47,201	8/6	8 3 3
19	Luipaard's Vlei ..	6 1/2	4 1/2	—	—	1,514,592	41,341 Dec., '15	15	4	14	3	1	3	*946	28,875	12/3	11 14 3
20	May Consolidated ..	3 1/2	2 1/2	70	40	1,635,308	122,478 Dec., '15	47	4	—	—	27	7	*20,678	20,000	5 1/2	10 11 11
21	Meyer & Charlton ..	3 1/2	2 1/2	35	35	1,312,500	261,342 Dec., '15	42	4	17	9	24	7	57,114	70,000	6 1/2	5 9 9
22	Modder B ..	3 1/2	2 1/2	—	—	175,000	37,508 Dec., '15	37	2	16	6	20	8	*37,163	50,000	6 1/2	16 0 0
23	Modder Deep..	3 1/2	2 1/2	—	—	261,250	32,624 Dec., '15	20	4	—	—	6	3	*9,616	55,000	12/6	27 18 1
24	New Goch ..	3 1/2	2 1/2	65	40	1,333,410	107,424 Dec., '14	33	8	21	6	12	2	8,508	11,500	2 1/2	6 14 5
25	New Heriot ..	3 1/2	2 1/2	10	5	1,650,433	14,699 Dec., '15	27	0	19	1	7	11	30,640	115,154	29/9	25
25	New Kleinfontein ..	1 1/2	1 1/2	—	—												

26	New Modderfontein (£4)	152	121	30	164	164	2,752,500	353,182	June, '15	44	2	18	0	26	2	71,894	194,123	£17,310	140,000	164	7	15	2	26
27	New Primrose	152	121	40	10	7 1/2	2,888,150	11,719	Dec., '15	15	3	12	4	3	0	*3,431	*9,333	—	32,500	5/6	63	12	8	27
28	New Unified	152	121	20	10	10	350,000	18,837	Dec., '15	20	0	13	11	6	2	*4,402	*13,327	—	25,000	13/6	29	12	7	28
29	Nourse Mines	152	121	17 1/2	5	5	1,578,811	112,894	June, '15	24	0	20	7	3	5	9,212	32,073	—	82,782	3 1/2	11	0	8	29
30	Randfontein Central	152	121	22 1/2	10	nil.	737,647	44,463	Dec., '15	25	2	17	9	8	9	65,000	172,319	171,648	134,379	11/9	4	5	1	30
31	Robinson Deep	152	121	22 1/2	10	10	3,925,186	139,464	Dec., '15	26	4	18	7	6	8	*27,023	*76,868	—	100,000	19/6	20	10	3	31
32	Robinson Gold (£5)	152	121	18 1/2	8	6	11,142,186	2,998,125	Dec., '15	23	11	14	0	9	11	29,264	91,368	—	275,000	19/6	71	15	11	32
33	Rose Deep	152	121	35	15	5	2,578,961	96,336	Dec., '15	23	11	17	5	6	6	22,958	92,769	—	70,000	1 1/2	24	15	4	33
34	Sinner & Jack	152	121	10	5	5	5,578,961	78,786	June, '15	22	5	15	1	7	4	*24,107	*77,446	—	300,000	8/-	25	0	0	34
35	Van Ryn	152	121	45	22 1/2	17 1/2	2,232,000	15,499	June, '15	23	9	—	—	9	11	*19,496	*54,841	—	50,000	2 1/2	17	6	0	35
36	Van Ryn Deep	152	121	25	15	17 1/2	777,979	154,678	Dec., '15	37	0	17	4	20	0	*47,076	*137,123	—	119,689	3 1/2	9	18	1	36
37	Village Deep	152	121	21 1/2	10	11 1/2	1,272,900	106,647	Dec., '15	29	0	20	9	8	3	22,621	62,062	—	106,067	1 1/2	13	6	8	37
38	Village Main Reef	152	121	21 1/2	70	20	3,667,143	243,820	Dec., '14	27	4	20	0	7	4	10,293	25,717	—	147,200	1 3/4	19	7	10	38
39	Witwatersrand	152	121	50	25	25	1,853,806	83,659	Dec., '15	24	9	15	0	10	7	24,003	71,726	—	46,962	2 1/4	18	12	1	39
40	Witwatersrand Deep	152	121	32 1/2	15	13 1/2	2,161,877	89,336	Dec., '15	24	5	17	6	6	11	15,149	45,384	845	55,000	1 1/2	24	17	6	40
41	Wolmar	152	121	12 1/2	6 1/2	6 1/2	944,000	46,213	Oct., '15	24	7	17	8	6	11	12,470	37,984	£47,931	86,000	10/9	27	18	1	41
42	Central Mining (£12)	152	121	21	—	—	1,197,500	24,539	Dec., '14	—	—	—	—	—	—	—	—	—	510,000	6 1/2	—	—	—	42
43	Cons. Gld. Flds. of S.A.	152	121	5	—	7 1/2	5,225,000	80,088	June, '15	—	—	—	—	—	—	—	—	158,250	200,000	1 1/2	5	6	8	43
44	Johannesburg Cons. Inv.	152	121	—	5	—	3,238,750	163,017	June, '15	—	—	—	—	—	—	—	—	—	395,000	16/9	5	19	5	44
45	Rand Mines (5/-)	152	121	200	80	80	11,417,866	339,012	Dec., '14	—	—	—	—	—	—	—	—	—	53,149	3 1/2	12	3	9	45
46	Randfontein Estates	152	121	—	2 1/2	nil.	525,254	329,128	Dec., '15	—	—	—	—	—	—	—	—	—	300,154	14/6	3	8	11	46

† A bonus of 100% was also paid. ‡ A bonus of 50% was also paid. § A bonus of 25% was also paid. * Including sundry revenue. †† Per annum for 20 years from April, 1910. ‡‡ Per annum for 10 years from October, 1911. ‡‡‡ Not including bonus.

It is notified in the Government Gazette for public information that, with a view to the more effective co-ordination of all matters of an industrial character, the Commerce and Industries Section of the Customs Department has been transferred to the Department of Mines and Industries, and all communications bearing on the industrial development of the Union, as well as on trade matters generally, should in future be addressed to the Secretary for Mines and Industries, Industries Section, Pretoria.

Department of Mines and Industries. A further relaxation in the stringency of the emergency rules of the Imperial Treasury relating to securities held by Colonial investors and those belonging to allied and neutral nations has been made. Hitherto, such securities have not been saleable on the London market; but henceforth this restriction will not operate so long as the proceeds of such sales are reinvested immediately in British Government securities. Thus a new source of financial support is being created for the successful conduct of the war. The rules governing this concession are that the usual declaration should be obtained that the sale is not on behalf or for the benefit of the enemy, either directly or indirectly; and that the proceeds of the sale should be invested in British Government securities. Although this modification of the former emergency regulation will not permit the Colonial investor to realise cash on the disposal of his interests, it has the advantage of allowing him to secure a profit or cut a loss on speculative shares and reinvesting the proceeds in more stable securities.

Rhodesian Mineral Prospects. In a lecture delivered in London, in mail week, Mr. Wilson Fox said:—
“The gold belts cover a large area, a fact which augurs well for further discoveries. The total value of the gold produced since 1859 has been £32,635,432. The production in 1915 amounted to £3,823,167, bringing Rhodesia to the sixth place in the list of the gold producing countries of the world. Amongst British possessions it now ranks fourth. In Northern Rhodesia no gold discoveries of importance have as yet been made, though favourable results have been obtained on a small scale in the neighbourhood of Fort Jameson. The geographical distribution of the discoveries of payable minerals and base metals upon which work has been done are similarly shown in my next map. Rhodesia possesses in the Wankie coalfield one of the great coalfields of the world. The tonnage available is enormous, and the coal, both as steam-coal and as a coke-producing coal is of exceptionally high quality. Coal has also been met with at other points in the Zambesi and Limpopo Basins, and Wankie is the only place at which it has hitherto been worked commercially. The chrome-iron-ore deposits of Rhodesia, which occur in the Selatuke District of Southern Rhodesia, are also remarkable. Of a world's annual consumption in 1915 of about 120,000 tons Rhodesia produced 60,000 tons, or 50 per cent. of the whole. The Selatuke district also contains important deposits of asbestos, which are being worked on an increasing scale. The mines in Northern Rhodesia have hitherto been of less importance, and its mineral wealth so far as present known, appears to consist mainly of deposits of zinc, lead, and copper, some of which are expected to prove of considerable value. It is worthy of note that the Victoria and the Gonyia Falls on the Upper Zambesi, and the falls of the Kafue, Lusenya, and other rivers which descend from the central plateau into the Zambesi-Loangwa trough, will at some future time doubtless be utilised for the development of metallurgical and other industries.

Sensational values have been met with in the Motor mine in the No. 7 or bottom level. The locality is 55ft. south of the winze put down 580ft. south of main shaft from No. 6 level. (It will be remembered that the No. 7 level was started from this winze.) At the point of intersection a leader 9in. wide has an estimated value of £50 per ton. Six feet further on a borehole was put in and proved 15in. of ore and an assay value of £350 per ton. Isolated high values are found in most mines, but the figures mentioned above are exceptional. The directors commendably advise shareholders to await further developments. Commenting on the news, the London papers say that if the Cam and Motor were to prove a second Globe and Phoenix, Rhodesia would rise in the estimation of mining investors.

National Diamonds.

A meeting of the National Diamond, Ltd., in liquidation, will be held before the Master of the Supreme Court (Transvaal Provincial Division) on Friday, 16th day of June, at 10 a.m., for the purpose of filing claims and for the consideration of an offer received for the purchase of the plant and other assets.

DREDGING IN MOZAMBIQUE.

Profitable Working of the Low Grade Gravels—Boulders Blasted in the Dredge Buckets.

[By L. C. DE LA MARLIERE.]*

MANICA Province is traversed by a gold-bearing schist belt running from east to west and including several gold-quartz mines. The axes of the schist belt are formed in Manica by the Revue valley, and in the adjoining Rhodesian territory by the Untali River. Entirely surrounding the schist belt the country is granite. Many gold-quartz veins exist in Manica, but the Braganza lease has been developed only lately by the Andrada Mines, Ltd. The alluvial deposits have been of greater interest up to the present time and have been worked since prehistoric days. It is even asserted that the gold of the Queen of Sheba came from Manica and Rhodesia. Whatever the truth of this statement, however, it is certain that large and important workings have been carried on by the natives, usually under the armed supervision of the Portuguese when the latter first occupied the territory in the Sixteenth Century. These workings consist of vertical shafts uniting underground explorations and some drifting work. In recent times experimental work has been carried out by English and Portuguese operators with sluices and washing boxes, but all this work was commercially unsuccessful and gave rather a bad reputation to the deposits. About twenty years ago, a dredging company started to operate with a small, 3-cu. ft. dredge of the Australian type, on a deposit in the Mudzoi, a tributary of the Revue. After working for only about eight days, the company was bankrupt and the dredge was abandoned. Prospectors have been unable to find payable parts in this deposit because the water is so abundant in the ground that they did not reach bedrock, upon which 75 per cent. of the gold is found. The dredge operators did not notice the difference between New Zealand and South African ground and did not recognise the impossibility of handling large boulders and clay with small dredges. Prospecting for the Andrada Mines, Ltd., was begun in 1911 under my direction, the first work done being the prospecting of the Revue valley by shaft and Keystone drills. Since the deposits are patchy and the gold coarse, shafts have been utilized to determine the composition and value of the ground. The Keystone drill is used on a large scale, but only for verification. The valley is divided into three different parts—one channel in the centre about 600 ft. wide and terraces of variable widths, extending sometimes to 600 ft. on each side. The channel, which is the valuable part, is covered with swamp and strewn here and there with ancient workings. The alluvial ground is composed of 6 to 8 ft. of overburden, containing sometimes some very sticky clay, and 6 to 8 ft. of pay wash. The latter is divided into two layers. The top one is recent and poor, and the second is a yellow, ancient deposit that is cemented and rather rich. It contains coarse pebbles and boulders. On the terraces the wash is composed of 4 to 6 ft. of ancient yellow and rich gravel, but is covered by 15 to 30 ft. of sticky clay and soil. The bedrock of this alluvial formation is soft, decomposed schist, favourable for dredging operations. The gold is usually coarse, and even when fine, it is heavy and easy to recover. It averages about 920 points of gold and 70 of silver fine. The total length of the payable alluvial in the Revue valley is about 12 mi., with an average width of 1,000 ft. At the end of 1912 a 7½-cu. ft. dredge was ordered from the Bucyrus Co., of Milwaukee. The installation of the plant for alluvial exploitation began in 1913. The equipment consisted of a dredge, complete repair shop and a hydraulic power plant able to supply 1,000 h.p. This plant was built in the Inhamucarara Mountains, 14 km. from the dredge. It consists of a ditch 4 km. long, a pipe line of 1,200 m., with a fall of 320 m., to the power

station, a thoroughly up-to-date plant with automatic apparatus promising security and continuity. Power is obtained through two Pelton turbines of 500 h.p. each, coupled with two three-phase generators. The current is generated at 4,250 volts and transmitted to the dredge camp at 15,000 volts, and for use is stepped down to 2,000 volts. The dredge, called the "Alpha," is a modern steel plant of the California close-connected, chain type, having digging buckets of 7½-cu. ft. capacity. The hull is 150 ft. long, 40 ft. wide and 9 ft. deep. The revolving screen is 35 ft. long, and the tables are covered with Hungarian rifles. The stacker is 60 ft. long. The dredge steps ahead with two steel spuds weighing 14 tons each. The total weight of the dredge complete is 800 tons. The erection was started in June, 1913, and completed in October of the same year. From February 10, 1914, to June 30, 1915, the dredge handled 1,931,051 cu. yd. and recovered gold valued at 1,749,495 francs—that is to say a unit recovery of 90 centimes, or 18c. per cu. yd. The average expenses during this time have been 44 centimes, of 8c. per cu. yd., this including prospecting, developing and all general expenses in Mozambique and at London and Paris, but does not include any amortization. The ground contains a great quantity of large boulders, and the Revue proposition would have been a failure had it not been possible to eliminate them quickly and cheaply. The Andrada Mines, Ltd., inaugurated the new system of breaking up the boulders in the buckets themselves, using a small charge of dynamite put on top of the boulder and covered with clay. The boulders are thus cracked by the blasting, and they can be sent to the hopper without risk of damage. The system has given splendid results. The average time lost per boulder is from one to two minutes, according to size and hardness of the rock. The bucket line was changed in August, 1915, after about 19 months of work. During this time the buckets were subjected to approximately 8,000 blastings, or more than one hundred shots per bucket, and there was no accident during this time, nor did any damage result. The dredge is working in a pond about 1,000 ft. wide; sometimes increasing to 1,200 ft. Half a cut is worked during a week, with one sheave on shore and the other fixed on a boat anchored in the middle of the pond. The following week the dredge works the other half of the cut, after having changed the necessary cables. Only 4 hr. weekly is lost in making this change. The wide pond allows fairly regular monthly outputs in spite of the very packy ground.

When the Cougo Concession was acquired by the Oceana Development Company last year the purchase price was £6,000, £5,000 of the amount being obtained by selling to the vendors 20,000 forfeited shares in the Oceana Development Co. The present directors regard the transaction as indefensible, and *ultra vires*, and state that even if judgment were obtained for the company in an action at law "it would most probably prove barren of result." One of the directors therefore has repurchased 15,075 shares for £849; add solicitors' costs and commission £93, and the figure is raised to £942, or 1s. 3d. a share, at which price shareholders can buy them from the director in question. The *Financial News* says: "Shareholders doubtless wonder what it all means, for the circular sent to them neither makes the position clear nor shows any attraction in a deal."

*Director, Andrada Mines, Ltd., Macequice, Mozambique.
New York Engineering and Mining Journal.

THE POSITION OF ZAAIPLAATS TIN.

THE Directors' report of the Zaaiploats Tin Company for the quarter ended 30th April, 1916, states:—Reduction Works.—The mill ran on 72 days during the quarter, crushing 5,038 short tons, the duty per stamp being 10.5 tons per 24 hours. In addition 2,535 short tons of sands residues were retreated. The output for the quarter amounted to 102 long tons of concentrates, assaying approximately 71.5 per cent metallic tin. The results of working show an estimated profit of £3,091 7s. 9d., excluding taxes and directors' fees, made up as follows: Estimated profit for the three months' operations, £467 10s.; add adjustments of estimated values of previous shipments, £2,623 17s. 9d.; profit declared for the quarter, £3,091 7s. 9d. N.B.—The average price per ton of metallic tin on which the above figures have been calculated is £186 6s. 3d. Mining.—No. 6 Section: An important change for the better took place in this working after the face intersected a dyke. The ore encountered resembles that obtained from No. 6 ore body before it reached No. 6 fissure four years ago. No. 13 Section: The chief feature of the main face during the quarter was the great size and strength of the ore body. The grade remained low until a few weeks ago, when the ore

body increased in value but decreased in size. Camp section: No payable ore was encountered. Efforts are being made to discover the outcrop of the seam for the purpose of transferring exploration to a new area. Roodepoort Lease: Several bodies of ore were discovered. Up to date, however, none proved to be the extension of No. 6 ore body. T. C. L. Lease: This property was taken over during the quarter and a considerable amount of exploratory work was done. The amount of ore available is very satisfactory and the development prospects are favourable. During the quarter 7,095 tons of ore was mined and disposed of as follows:—Waste sorted, 2,860 short tons; sent to mill, 5,038 short tons; total, 7,898 short tons; less taken from reserve dumps, 803 short tons; total, 7,095 short tons. Water Supply: 3.23 inches of rain fell on seven days. The long-continued drought necessitated careful husbanding of the available water supply, and additional arrangements are now being made to provide against a possible shortage during the winter months. The mill running time and tons crushed were reduced by closer sorting. Alluvial work was suspended owing to the advisability of reducing water consumption.

The Cape Diamond Output.

The following is the official statement of the output of diamonds from the public diggings in the Cape Province for the month of April:

BARKLY WEST DISTRICT.

	No. of diggers.	Carats.	Value.
Bad Hope	2	73	£19 12 6
Delpoit's Hope	43	312½	1,524 10 0
Elandsdrift	2	2	3 15 0
Forlorn Hope	8	35½	311 2 6
Gong Gong	43	427	3,497 4 6
Good Hope	23	102½	248 0 0
Harrisdale	10	75½	373 7 6
Hebron	122	794½	4,524 1 6
Holpan	24	108½	614 17 6
Jonas Kopje	3	24	75 10 0
Keiskama	6	34½	109 2 6
Klipdam	58	366½	2,102 5 0
Klipdrift	69	249½	884 7 6
Lauraville Estate	3	22	133 15 0
Longlands	32	227½	1,521 5 0
Niekerk's Rush	5	43	325 10 0
Ricketts' Prospect	24	126	411 0 0
Scholt's Prospect	26	143½	964 7 6
Snyder's Rush	41	520½	4,700 2 6
Union Kopje	4	12½	33 0 0
Van Xoele's Laagte	14	59½	336 7 6
Waldek's Plant	39	546	3,972 17 6
Winter's Rush	64	463½	3,216 0 0
	665	4,724½	£30,204 1 0

NOTE.—The number of claimholders in the mining district of Barkly West during the month of April was 1,126.

HERBERT DISTRICT.

Brypoll	4	41	£191 0 0
Platdrift	6	43	215 7 6
Schmidt's Drift	3	18½	92 10 0
Sevenonelles	3	7	22 5 0

KIMBERLEY DISTRICT.

Robinson's Kopje	9	73	£418 0 0
Wedberg	30	273	1,879 5 0

TAUNGS.

Killarney	9	34½	£163 17 6
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PRIVATE ESTATES.

River View Diamond Syndicate, River View	175		£1,471 15 0
New Vaal River Co., Sydney-on-Vaal	1,039½		6,972 0 0
Pniel Estate, Pniel	333½		1,848 12 6

1,547½ £10,292 7 6

Prospecting Activity.

The following are the salient features of the Government Mining Engineer's return of prospecting permits and prospecting, diggers and base metal claims held as at 31st December, 1915, and 30th April, 1916:—

	Prospecting permits.		Total claims.	
	Dec. 31, 1915.	April 30, 1916.	Dec. 31, 1915.	April 30, 1916.
Johannesburg	21	19	14,799	14,868
Kruger's-dorp	5	3	11,965	12,001
Boksburg	—	40	23,950	24,251
Heidelberg	3	2	7,366	7,621
Ottoshoop	5	10	560	632
Pretoria	10	21	65	65
Barberton	52	39	12,623	10,045
Pilgrims Rest	79	110	4,769	4,489
Pietersburg	58	68	22,952	20,117
Klerksdorp	15	11	2,375	2,333
Totals	248	323	101,429	96,422

The B.C. and L. Exploration Co., Ltd., is being formed with a capital of £15,000 for the purpose of acquiring options on various gold, diamond, copper, etc., properties. One in particular is an area of about 650 claims on the farm "Bothaskraal" No. 207, of the Far East Rand. The B.C. and L. Exploration Company is to be the parent company of subsidiaries to be formed later on for other properties upon which the company has already secured favourable options. One of the directors is Mr. James B. Barnes, formerly a contractor in the De Beer's

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NATIVE LABOUR DIFFICULTIES: CAPE RECRUITERS POSITION.

THE following petition has been sent to the Resident Magistrate of Kingwilliamstown:—

Dear Sir,—We, the undersigned, licensed labour agents operating on behalf of the Native Recruiting Corporation, Ltd., within the area assigned to the central office at Kingwilliamstown, desire to place before you the disabilities that have been imposed upon us by Government Notice No. 312 of March 8, 1916. This notice sets two definite limitations upon the conditions under which advances have hitherto been made to native recruits for the Transvaal mines:—(1) No advance can now be made except at the time of attestation in the presence of the attesting officer. (2) No such advance can be made unless a condition be inserted in the contract that the native will proceed to work within 14 days of attestation. These limitations materially affect us to such an extent that our operations as recruiters must practically cease. In this connection we respectfully submit that it is a distinct breach of faith for the Government in the month of January, 1916, to issue labour agents' licences, which enabled us to recruit native labour for the mines under conditions to the mutual advantage of the natives themselves and their recruiters, and greatly to the advantage of this country and the Empire at the present time, and then three months afterwards, when the licences have been paid for, to impose conditions which make recruiting almost impossible. In addition to this general observation, we desire to point out the following objections to the conditions imposed by Notice No. 312 of 1916:—(1) Upon receipt of the advance and the information conveyed to him by the attesting officer that the recruit can return to his kraal and not proceed to work earlier than he pleases within a period of 14 days, it follows that the native will probably avail himself of this privilege and will himself squander the advance, which, according to the notice, is presumably intended for the maintenance of his relatives and dependents. (2) It is stated that such advances can only be made for the maintenance of relatives and dependents. If the advance is to be made to the recruit himself at the time of attestation, we would ask who is to determine whether the advance is likely to be utilised for the purpose for which it is made. (3) We cannot understand upon what principle of justice

it is determined that if the native fails to go forward within the prescribed period that he shall be rewarded for his breach of contract by the Government refusing to allow the advance to be collected on behalf of the recruiter, unless with the special approval of the Director of Native Labour. (4) We are convinced that the risk of making advances under the new conditions is so much increased that our operations must be considerably restricted, that the number of desertions, even if the utmost vigilance and care are exercised, will be substantially augmented, and that there will be a shortage of labour for the mines. (5) We cannot comprehend what we as recruiters, conducting an honourable business in an honourable way, have done to justify the Government in taking such drastic steps as practically to deprive us of our business. It is our firm conviction that if the Native Affairs Department were more fully advised of the difficulties of recruiting from the recruiter's point of view, supported by a desire to treat us fairly, they would realise that it is the recruiter rather than the native who requires protection. We are moreover of opinion that no change whatever should be made in the present conditions of recruiting until such time as the Labour Act itself has been so amended as to make it compulsory for the native to proceed to the mine to discharge the obligations of his contract. We therefore respectfully request you, sir, to take such steps as you may consider advisable with a view to the revocation at an early date of Government Notice No. 312 of 1916. We have the honour to be, your obedient servants. (Sgd.) J. W. GIBSON, etc.

The Manager of the Colonial Mutual Life Assurance Society, Ltd., has received a cablegram from his principal office announcing that a bonus has been declared to all life policy holders for the year ended 31st December, 1915, at the rate of £1 10s. per £100, and the benefits under personal accident and sickness policies have been increased by £2 per cent. We understand that it is the intention of the directors to apply for a large amount in the new loan now being floated by the Union Government.

How the Railways Assist Local Industries.

The continued increase in the number and description of articles hitherto imported in large quantities, but now being manufactured in this country, indicates the great possibilities for South Africa, with its extensive supply of raw material (states the annual report of the Railway Board). The liberality of the railway facilities provided to assist local industries is becoming increasingly recognised and acted upon, with undoubted advantage to South Africa. The effect of the establishment of industries has been to create industrial activity in other directions, with the result that new works have sprung up in districts where the raw material necessary for the manufacture of the commodity concerned is obtainable. To foster industries adequate railway facilities and cheap transport are of vital importance, and the policy of the Board throughout the period of its office has been one of encouragement in this direction. But, notwithstanding the assistance afforded by the Administration, certain articles manufactured inland, if required by the coastal consumer, compare unfavourably in price with similar imported commodities. The increase in the variety and extent of manufactures is also bringing into prominence the attitude the Railway Administration should take in regard to the source from which it should procure supplies for its own requirements. The South African manufacturer represents that, in addition to the handicap of increased cost of labour and of such materials as he must import for his manufactures, he labours under the disadvantages of being restricted to supplying the South African market only, and the more this market is restricted the greater will be his manufacturing costs, while his overseas competitor has the greater part of the world as his market to sell in, and is accordingly able to produce on a large scale. In the case of the South African supplier, especially when situated inland, the prices at which he can supply to the Railway Administration at places not far distant from his factory are frequently favourable as compared with the prices of the overseas supplier, when everything is taken into consideration. This is not always the case, however, at more distant places, especially at or near the coast, when the overseas competitor has the further advantage of low sea freight. The existence of factories within the Union is calculated to add to the traffic of the railways as the result of the labour employed in the production of the articles and in the carriage of the raw materials. This is a consideration of some account to the Administration. On the other hand, it is admitted that the Administration could obtain at less cost a portion of its requirements from overseas for delivery at certain places on the railway. The question has been brought into greater prominence by the conclusions of the Select Com-

mittee on Public Accounts (session 1915) as recorded in paragraph 34 of its fourth report to Parliament regarding the purchase of cement of South African manufacture for use at Capetown and Durban on the authority of the Railway Board. The Board held that while the cement could in this particular case have been obtained from overseas at less cost, yet the proper course to follow was to adopt the wider view of what was the best in the public interest as a whole, having regard to the large quantities of cement used elsewhere than at the coast. It should be mentioned that some years ago the cement produced in South Africa was inferior in quality, lesser in quantity and much dearer in price. The railways, among others, proving attractive prospective customers, the manufacturers took steps to so improve the cement that the South African article is now equal to that from overseas, while the price is substantially lower than formerly. The result is that to-day the cement produced in South Africa considerably exceeds the quantity imported from overseas, and the percentage in favour of the South African article is constantly increasing. As it happens, the war has been the means of restricting the supply and increasing the price of overseas cement, and so has further justified the policy of the Board.

The following gentlemen were, in mail week, appointed by the President of the Board of Trade to be a Committee to control the supply and distribution of petrol, and to consider what measures are necessary in the national interest (a) to ensure that adequate supplies of petrol shall be available for the purposes of the war and for other essential needs, and (b) with the above object, to regulate the use of petrol for other purposes in the United Kingdom during the period of the war, and subject to the direction of the Board of Trade to give executive effect to the measures decided upon: Mr. Oliver Bury (chairman), Mr. Albert Edward Bowen, Sir John Prescott Hewett, G.C.S.I., Mr. Philip G. L. Webb.

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Rhodesian Section.

RHODESIAN MINING STATISTICS.

What Rhodesian Mines Buy.

IMPORTS OF MINING MATERIAL AND STORES PRINCIPALLY USED FOR MINING PURPOSES, 1914 AND 1915.

The following list shows the value, at place of purchase, of the imports of the principal mining material and stores into Southern Rhodesia. The particulars are taken from the Customs returns, and from the Rhodesia Chamber of Mines annual report:—

	1914. Value.	1915. Value.
Acid, Sulphuric	£2,605	£2,676
Assay apparatus	6,418	7,042
Blasting compounds and dynamite	69,542	77,308
Borax	2,470	2,881
Candles	23,250	22,089
Cautic soda	437	294
Cement	8,972	2,738
Coal, coke and patent fuel	453	263
Composition, Boiler	425	309
Composition, Metal	1,429	2,552
Copper, Plate and sheet	812	340
Copper, Bar		2,747
Cyanide of potassium	896	20
Cyanide of sodium	59,327	69,189
Detonators and fuse	18,395	14,384
Electric fittings	15,862	7,575
Fire bricks and clay	237	185
Grease, Antifriction	4,195	4,426
Iron and steel—		
Angle, channel, and T.	833	548
Bar, bolt and rod	13,670	13,874
Chains	1,018	925
Girders, beams, joists	6,561	2,216
Galvanised	2,906	2,267
Galvanised, corrugated	24,666	12,613
Pig and ingot	258	444
Pipes and piping	20,502	9,266
Plate and sheet	2,481	4,587
Lead—		
Bar and Sheet	191	83
Foil and acetate	1,726	3,976
Pipes and Piping	28	25
Lime	5,068	7,095
Litharge	925	585
Machinery—		
Bands and belting	18,968	14,880
Buckets and trucks	3,980	2,216
Electrical	20,714	5,758
Mining	137,002	78,721
Packing	3,585	4,422
Parts	21,613	14,048
Pumps	10,901	6,978
Oil—		
Castor	2,006	1,655
Colza	18	6
Lubricating	13,246	4,019
Quicksilver	3,558	658
Tramway material	1,336	1,693
Waste, Cotton	1,314	2,969
Wire rope	3,563	
Wood—		
Handles for picks, etc.	1,308	1,147
Unmanufactured	20,565	14,345
Zinc	12,072	20,117
	£575,467	£462,183

Growth of Rhodesian Gold Output.

TOTAL VALUE OF GOLD OUTPUT OF SOUTHERN RHODESIA FROM COMMENCEMENT OF FIELDS.

PRIOR TO COMMENCEMENT OF FIELDS.			
		Value.	Value.
Prior to 1899	£63,053	1899	£205,690
1900	308,249	1901	610,389
1902	687,096	1903	827,729
1904	969,343	1905	1,449,985
1906	1,965,099	1907	2,178,686
1908	2,526,006	1909	2,623,709
1910	2,568,196	1911	2,647,896
1912	2,707,369	1913	2,903,268
1914	3,580,209	1915	3,823,169
		Total to date	£32,685,342

List of Rhodesian Gold Producers.

SCHEDULE EXHIBITING DIFFERENT CLASSES OF GOLD PRODUCERS AND VALUE OF PRODUCTION OF EACH CLASS DURING 1915.

	No. of producers.	During year.	At end of year.	Value of gold recovered.
(1) Companies operating own claims	25	23		£2,521,649
(2) Tributors of companies' claims, small companies and syndicates and individual workers	408	180		1,301,519
	433	203		£3,823,168

COMPARATIVE TABLE OF GOLD AND OTHER METAL AND MINERAL OUTPUT FOR YEARS 1914 AND 1915.

	1915. Value.	1914. Value.
Gold	£3,823,168	£3,580,209
Silver	17,144	14,277
Lead	557	2,488
Chrome iron	175,792	107,612
Asbestos	32,190	8,612
Coal	123,194	115,099
Copper	224,314	50,559
Arsenic	—	160
Diamonds	1,016	3,985
	£4,399,074	£3,883,001

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New Union Loan: Details of Issue.

It is notified in the *Union Gazette* Extraordinary that the Bill to provide for the issue, under the General Loans Act, 1911, of local stock at a fixed price, and as registered stock and for the issue of securities free of Union taxation has been enacted as follows:—(1) Notwithstanding anything contained in sections two and three of the General Loans Act, 1911 (Act No. 17 of 1911), local stock, as in that Act described, may be issued by sale to the public at a price to be fixed by the Governor-General and may be issued as registered stock. Stock issued as registered stock shall be transferable by any written instrument of transfer and the stock certificate issued by the Treasury in respect to any such registered stock shall be *prima facie* evidence of the title of the holder

of the certificate to the stock specified therein. In all other respects the provisions of the General Loans Act, 1911, applicable to local stock shall apply to registered stock issued as herein provided, except that such registered stock shall not be convertible into stock certificates to bearer as in section four of that Act provided. (2) The Governor-General may, if he thinks fit, during the continuance of the present war, and a period of twelve months thereafter, issue any securities which he has power to issue for the purpose of raising money, under a condition that the interest on such securities shall be exempt from any Union taxation on incomes present or future; and such securities issued by the Governor-General with such a condition shall be so exempt from such taxation. (3) This Act may be cited for all purposes as Local Stock (Registration) Act, 1916, and shall be read as one with the General Loans Act, 1911.

THE WEEK IN THE SHAREMARKET.

"Indigestion" Alleged to be Cause of Recent Quietness—A Holiday Week.

"INDIGESTION" was the reply made to the enquiry as to the cause of the slump on Tuesday morning. Over-buying and maturing time bargains gaily entered upon during a rising market. New Kleinfonteins seem to have been the chief cause of the drop. They were fairly pumped out at whatever price was offered. As is always the case when a popular stock gets hammered, differences have to be made up somehow, consequently other shares are hastily sacrificed. African Farms were let go at the first offer, Bantjes followed suit, as also Knight Centrals. Gedulds and Government Areas were also parted with at a discount on overnight rates. Modder B's and Deepes touched the lowest point for some time past. The three exceptions to the general set-back were Glynn's Lydenburg, which continue rising whatever the rest of the market may do; Roodepoort United Main Reefs reacted over night, but improved above their best in the midst of the slump. Their advance, it appears, is not due to the suggested amalgamation with the Steyn Estate, but to actual improvement in development. Cinderellas were the third stock marked up. All the other small fancies, such as Lace Props and Sallies, suffered considerably. Shortly after the call was over, the market steadied and soon began to improve, notably in Kleinfonteins and Government Areas. The sellers of the first-named apparently being as anxious to get in again as they were to get out. The improvement was maintained through the day and maintained to the close. As soon as investors began to think, they turned their attention to Modder B's as a good thing at their low level, and the price gradually crept up until no dead bargains were obtainable. On the whole the slump has been salutary, however unpleasant to the actual sufferers who were forced to part with their stocks. The general dullness of the last two or three weeks can only be attributed to overstocking, consequently a little letting out will be productive of good in the end. The two days' holiday on Wednesday and Thursday naturally caused some hesitancy, otherwise the recovery might have been even sharper. Holders of better class goods need be under no apprehension, while to those who have invested in "just paper," they will have to wait until the next batch of giddy Jugginses are on the war path.

The market opened steady on Friday after the holidays, but is naturally waiting on the Home cables. Closing prices were maintained with few exceptions, and some improvements were noted. Weakness was shown in African Farms, with sales and sellers at 9s. 6d., and Knight Centrals with sales at 10s. 6d. Roodepoort United Main Reefs were only bid to 9s. 3d., with sellers at 10s. To the good, were Brakpans at 78s., City Deepes 77s. 6d. to 78s. 6d., Gedulds at 43s. 9d., Government Areas at 36s. 9d., Kleinfonteins at 26s. 6d. buyers, Springs at 54s., and Van Ryn Deepes at 68s. 6d. to 69s. 6d. The Modder lot were quiet at about closing prices. In the small stocks Cinderellas advanced to 7s. 3d. on the recent discovery as to the actual value of the grade.

	Tues. 23rd.	Thurs. 25th.	Fri. 26th.	Sat. 27th.	Mon. 29th.	Tues. 30th.
Adair-Ushers	—	—	—	—	—	0 3*
African Farms	10 1*	10 1*	10 3	10 0*	10 0*	9 6
Apex Mines	5 9*	5 9*	—	5 9*	5 9*	5 9*
Aurora Wests	11 0*	11 0*	11 6*	11 6*	—	11 6*
Bantjes Cons.	13 6	13 6	—	13 0	13 0	11 6
Blaauwbosch Diamonds	—	47 6*	—	—	—	—
Brakpan Mines	78 6†	77 6†	78 0†	77 6†	78 3†	77 0
Breyten Collieries	—	—	—	—	19 9	—
Briek and Potteries	5 0*	—	—	—	5 0*	—
Bushveld Tins	0 6*	0 5*	0 6*	—	—	0 6*
Cinderella Cons.	—	7 0†	7 0†	6 0*	6 0*	6 9*
City and Suburbans	36 3*	36 3*	36 6	37 0†	36 6	36 0*
City Deepes	77 6	77 6	77 0*	78 6	78 6	77 0*
Cloverfield Mines	8 9	8 8	—	8 6	8 4*	7 11
Clydesdale Collieries	11 6*	11 6*	—	—	—	—
Concrete Construction	1 6*	2 0†	1 6*	—	—	—
Cons. Langlaagte	35 0†	35 0†	34 0*	34 0†	33 3*	33 0*
Cons. Main Reefs	19 0*	20 0	20 0†	19 6*	19 9	19 9
Cons. Mines Selection	17 0*	18 0†	18 0†	17 0*	—	18 0†

a Odd lots. * Buyers. † Sellers.

	Tues. 23rd.	Thurs. 25th.	Fri. 26th.	Sat. 27th.	Mon. 29th.	Tues. 30th.
Coronation Freeholds	—	0 4*	0 4*	0 4*	—	0 3*
Coronation Syndicates	—	—	—	2 0*	1 6*	—
Crown Diamonds	2 9†	2 0*	—	2 0*	2 0*	2 0*
Crown Mines	53 0*	53 0*	53 0*	53 0*	53 0*	52 0*
Durban Road. Deepes	—	—	—	—	—	14 0†
East Rand Centrals	8 3	8 0*	—	8 0*	8 0	8 2
East Rand Coals	3 8*	3 10*	3 10*	3 9*	3 9*	3 6*
East Rand Deepes	—	1 6	1 5*	1 5	1 3*	1 4*
East Rand Mining Estates	16 0*	16 0*	16 0*	—	—	—
East Rand Props.	14 0	13 0	13 6*	13 6*	13 6	13 6*
East Rand Debutures	—	£78*	£78*	—	£78*	£78*
Eastern Gold Mines	1 7*	1 7*	1 7*	1 7*	—	1 6*
Frank Smith Diamonds	2 3*	2 4	2 4	2 5†	2 4	—
Geduld Props.	44 0*	—	44 0*	44 3	44 0*	42 9
Glencairns	1 9*	—	—	1 6*	—	—
Glencoe Collieries	—	6 6*	—	—	6 6*	6 6*
Glynns Lydenburg	15 6*	16 0*	16 0*	16 0*	15 0A	17 6*
Goorz & Co.	—	13 9	—	—	—	—
Government Areas	36 0	38 3	37 9	36 3	36 6	35 6
Jupiters	—	—	—	5 0*	—	5 9†
Klerksdorp Props.	1 9*	1 9*	1 9*	1 9*	1 9*	1 9*
Knight Centrals	12 6*	12 6*	12 6	12 3	12 0*	10 9
Knights Deepes	—	—	—	—	—	20 0*
Lace Props.	6 9	6 7*	—	6 4	6 3	5 3
Lupaardsvlei Estates	8 0*	8 3*	—	—	8 6	8 6
Lydenburg Farms	8 1*	8 0*	8 1*	8 1	8 1*	—
Main Reef Wests	7 0	6 10	6 10*	6 9*	6 9	6 6*
Meyer and Charltons	—	107 6*	107 6*	107 6*	—	107 6*
Middelvie Estates	1 3*	1 3*	1 3*	1 3*	1 3*	1 3*
Modderfontein B.	133 0*	133 6*	—	133 0	133 0B	131 0
Modder Deep Levels	134 0	134 6	134 0†	132 6	131 0†	130 0
Leunpoort Tins	14 9	15 2*	15 6*	15 6*	15 3*	15 0
Natal Navigation Colls.	—	16 6*	17 0	16 9*	—	—
National Banks	220 0*	220 0*	—	220 0*	—	—
New Eland Diamonds	—	20 6*	—	—	—	—
New Era Cons.	8 0*	8 4	8 5	8 3*	—	8 6†
New Geduld Deepes	5 7*	5 7	5 7	5 7	5 7	5 5*
New Gochs	14 6*	—	—	14 6†	—	—
New Heriots	54 0†	—	54 0†	—	50 0*	—
New Kleinfonteins	27 9	27 9	27 9	27 3	27 6*	24 9*
New Modderfonteins	335 0*	340 0	335 0*	340 0†	340 0†	—
New Roefonteins	1 0†	0 8*	0 8*	0 8*	0 8*	0 8*
New Unifics	—	—	—	13 0†	12 9	—
Pretoria Cement	73 0*	74 6*	74 0*	75 0	—	74 0†
Princess Estates	2 9*	2 0	2 0†	1 0*	2 0†	1 0
Rand Collieries	3 6*	3 8*	—	2 6*	—	—
Rand Klips	8 2	8 2	8 1*	8 0	7 9*	7 3
Rand Nucleus	2 1	2 1*	2 1	2 0	2 2†	2 0
Randfontein Deepes	3 10*	3 11	3 11	3 11*	3 11*	3 9
Randfontein Estates	—	—	—	—	—	11 6*
Roodeburg Minerals	13 9	—	13 0*	13 0*	13 0*	13 3
Roodepoort Uniteds	7 9*	8 0	9 3*	10 0	10 0	10 3
Ryan Nigels	2 7*	—	—	—	—	—
Shobas	2 0	—	1 9*	1 6*	1 6*	—
Summer Deepes	2 1*	2 1*	2 1*	2 2*	2 2*	—
S.A. Breweries	28 0*	28 0*	—	—	—	—
S.A. Lands	5 10*	5 10	5 8*	5 5*	5 5	4 11
Springs Mines	55 0	55 3	54 6	54 6	54 6	52 6
Sub Nigels	17 0	16 6*	16 6*	16 9*	16 6*	16 9†
Swaziland Tins	27 6*	27 6*	27 6*	27 6*	27 6*	27 6
Transvaal Coal Trust	65 0*	66 6*	66 9*	66 6	66 0*	—
Transvaal Lands	15 3†	—	—	15 3†	13 6*	15 0†
Transvaal G.M. Estates	21 6*	21 6*	—	21 0*	22 0*	22 6
Van Ryn Deepes	70 3*	70 3*	—	69 6	69 3	69 0A
Village Deepes	31 0†	31 6†	31 5†	—	31 6†	—
Vogel. Cons. Deepes	1 7	1 6*	1 6*	—	1 6*	1 9†
Welgedachts	23 0†	—	—	—	—	—
Western Rand Estates	—	—	—	—	1 3*	1 3*
Witwatersrand	56 6*	56 6*	56 6*	—	55 0*	57 0†
Witwatersrand Deepes	24 3*	—	24 0*	—	25 0	24 6
Wit. Townships	—	—	—	—	15 0†	—
Wolluters	9 8*	9 9*	9 8*	9 6*	9 6*	9 9
Zaaiplaats Tins	11 0*	11 0*	11 0*	11 0*	10 6*	10 0*

The German universities are taking great pains to collect all matter of interest to Germany which is published during the war. "War Archives" are being built up, for example, at Berlin, Hamburg, Munich, Kiel, Jena and Vienna. At Leipzig there are two special collections—one for economic and sociological questions, and another for political questions. In the former about half the collection consists of industrial information obtained from foreign countries; material dealing, for example, with the iron industry, the chemical industry, the machinery industries, and above all, with the textile and mining industries.

THE WEEK IN THE MINING MATERIAL AND ENGINEERING TRADES.

Holidays Too Much for Business—Better Trade Expected During June—Commercial Motors—American Trade—Centre for Second-hand Merchandise.

A COMBINATION of holidays has interfered with business. However, a more optimistic feeling prevails on the Commercial Exchange as the idea is that the mines will purchase more freely for their half-year supplies ending December next. As an incentive towards this end, it appears that the munition authorities in Britain have temporarily held back their consent for certain classes of steel, but no real shortage is anticipated here because the Home Government has promised to keep the industry supplied with actual necessities for the producing mines. Nevertheless there is a feeling engendered that no undue risks should be taken, and as the merchants have hitherto supplied practically everything required when a little notice is given, it is thought that the mining people will be giving some decent orders during this June month.

Foundries.—The local foundries are fairly well employed with repairing and recasting parts for breakages. The big firms who have gone to the expense of importing costly machinery are not satisfied with the prices paid by the mines for the best work. It is said that there is keen competition for the smaller class of work as it lends itself to the expert moulder for starting a small shop on his own account, and then he has perforce to pass the big breakages for the want of the necessary plant.

New industry.—In this connection, mine hammers are being made in Pretoria out of old railway-wheel tyres, the steel of which has proved very suitable for this new enterprise.

Motor Industry.—The carriage builders have gradually, out of necessity, gone in more and more for motor work. A very excellent motor bus body has just been completed in Johannesburg for the Benoni Municipality. The design was copied from an imported body, but a lighter one by about 500 lbs. has been made, which will require less petrol for its daily work. A question was asked if there was any prospect of the chassis portion of a motor being made here, and the reply was: not the slightest at present, as the internal combustion engine was too complicated and too delicate a piece of machinery to be made outside the big centres of the motor industries. Then there were the ignition and starting apparatus to be negotiated, which seem to be highly specialised. The conversation led on to the commercial delivery motors which so far had not caught on at present, at all events not to any great extent, chiefly because of the delays in getting repairs done. For example, when a breakdown occurred, as a rule there was no other trolley to replace the one which had to go into dock, neither could one be easily hired. Again, the expenses were heavy, as a good mechanic had to be engaged for driving and small repairs. All these disadvantages will no doubt be overcome in time. It may be that when the Government flood the market with military transport cars an impetus may be given to commercial motor deliveries. Here in Johannesburg, it must be remembered that we have the steady-going mules, with cheap forage as a rule, and the cheap Kaffir drivers to take a delight in their work, so much so that it was officially reported by the railway authorities some time ago that they were quicker and more reliable than the white men.

American Trade.—Much relief was expected from this quarter, but on account of the world-wide colossal orders sent to the United States, the latest advices from there hint at labour troubles. And what with the freight difficulty as well as the congestion of South African destined goods at the New York docks, the high-speed steel business, wire ropes, and other of the smaller requisites in use daily for the producing mines, cannot be depended upon so regularly as in the early days of the war. However, for motor spirits,

oils, paraffin, benzene, and suchlike merchandise, thanks to the American companies here and the foresight of their managers and representatives, stocks are sufficiently large not to seriously trouble about the shipments coming forward regularly, so long as they eventually come.

Second-hand Depôts.—It is marvellous what a centre Johannesburg has become as a second-hand machinery depôt for the whole of South Africa, and in a lesser degree, so far as the area is concerned, for all and every kind of building material, trade oddments of every and any kind, old minerals, such as lead, copper, brass, iron, etc. The first secret is that people at a distance know they can obtain cash here, and farmers and others can obtain from here goods on the credit system. It can readily be understood that for special kinds of machinery the railway carriage is not a serious consideration as compared with the value of anything resembling a high-class machine. However, according to an expert dealer, machinery from Salt River and the towns along the coast as far as Delagoa Bay and Beira, as well as all the big inland centres, are always in close touch with the Johannesburg second-hand market.

Trade Notes.—Agricultural machinery to the extent of a flour mill, corn grinding, and small motor went to Rhodesia this week. Carts and wagons are very slow of sale now the aftermath of the show demand has subsided. A drilling machine was sent to the vicinity of Kimberley, where prospecting for diamonds is taking place with a heavy overburden. Pietersburg is getting a sanitary plant from a Johannesburg maker. Deals are selling here at 1s. 3d. per foot, in some quarters, for small lots. Galvanised roofing iron is up fully a farthing per foot for all descriptions. Bricks are about the same price, but transport is getting difficult and dearer now that the winter has started, thus making a scarcity of food for the oxen. Oils, paints, leads, turps, etc., have not altered in price; however, business is running along quite evenly, as landlords must do a certain amount of repairs when tenants change.

REVISED PRICE LIST.

Approximate war prices, subject to quick change.—Mining and building hardware: Iron, imported, round up to 1 in., 30s.; 1½ in. to 2 in., 13s. 6d.; 2½ in. to 6 in., 25s. per 100 lbs. Do., square, up to 1 in., 27s. 6d.; 1½ in. to 2½ in., 13s. 6d.; 2½ in. to 5 in., 25s. Flats, 3-16 in., 37s. 6d.; all from ½ in. up, 25s. Angles, ½ in. to 3-16 in., 30s.; ½ in., 27s. 6d.; 5-16 in. to ¾ in., 25s., excepting 5 x 4 x ½ in.; mild steel bar, 3½ d. lb.; drill, 6½ d. lb.; tool, 7½ d. to 9d. lb.; steel plates, 10ft. x 4ft. x 1-16 in., 27s.; do., ½ in., and 3-16 in., 26s. 6d.; ½ in. and upwards, 25s.; 10 ft. x 5 ft. x 1-16 in., 28s. 6d.; ½ in. and 3-16 in., 26s.; 10 ft. x 6 ft. x 1-16 in., 28s. 6d.; 3-16 in. x 10 ft. x 4 ft., 26s.; ½ in. up, 10 ft. x 4 ft., 25s. to 27s.; hexagon bolts, ¾ in. to 3 in., 8d. per lb.; over 3 in., 7d. lb.; ½ in. up to 2½ in., 50s.; 2½ in. to 6 in., 47s. 6d.; 6½ in. and over, 45s.; ¾ in. up to 2½ in., 45s.; 2½ in. to 6 in., 42s. 6d.; 6½ in. and up, 37s. 6d.; ¾ in., ¾ in., and 1 in. up to 2½ in., 40s.; 2½ in. to 6 in., 37s. 6d.; 6 in. and up, 32s. 6d. 100lb. Nuts, ¾ in., 9d. lb.; ½ in., 50s.; ¾ in. to 1½ in., 47s. 6d.; 1½ in. to 1½ in., 52s. 6d. per 100 lbs.; 2 in., 7½ d. per lb.; washers, ¾ in. and under, 37s. 6d., and above that size, 32s. 6d. per 100lb.; shoes and dies, 32s. 6d. to 35s. per 100lb.; rails, £20 per ton; picks, 4 lbs., 27s. per doz.; shovels, 32s. 6d. to 50s. per doz.; hammers, drill, 7½ d. to 9d. lb., hammer handles (best American), 14 in., 3s. 6d., 24 in., 5s. 6d., 30 in., 7s. 6d., 36 in., 10s. 6d. per doz.; metal, anti-friction, 1s. per lb.; galvanised iron, 24 gauge, 6 ft. to 10 ft., 10d., 11 ft. 10½ d., 12 ft. 10¾ d.; 26-gauge, 6 ft. to 10 ft., all lengths, 8½ d. to 9½ d. per ft. all-round; flat galv., 18 to 24

gauge, 32s. 6d.; 26 gauge, 34s. 6d. 100 lbs.; floor brads, 30s.; ceiling, 30s.; wire nails, 29s. to 32s. 6d. per 100 lbs.; solder, 50 per cent., 1s. 2d. per lb.; locks, rim, 45s.; mortice, 60s. doz.; barbed wire, 22s. 6d. to 25s. 100 lbs. coil.

Timber: Deals, Baltic, 9 x 3, up to 16 ft., 1s.; over, 1s. 1d. to 1s. 3d. (Oregon, 11½d.); flooring, 4½ x ¾ and 6 x ¾, 6d. to 6½d. per sq. ft.; do., 4½ x 1½, 7d.; and 6 x 1½, 7d.; Oregon edge grain, 6d. to 7½d.; ceilings, 6 x ½, 3½d. to 3¾d. per sq. ft.; Oregon, 4 x ½, 4½d.; pitch pine, 7s. 6d. to 7s. 9d. per cub. ft.; Oregon, 5s. 6d. per cub. ft.; clear pine, ½ in. x 12 in., 7½d. per ft.; 1 in. x 12 in., 8d.; teak, small planks, 15s. per cub. ft.; do., large, 16s.; jarrah, 8s. 6d. per cub. ft.; poplar, 1 in. x 12 in., 9d.; scantling, 9 x 3, 11½d. to 1s. 1d. per ft.

Bricks, cement, lime, etc.: Cement, nominal, 34s. 6d. per cask; Pretoria Portland, 9s. 3d. per bag; 8s. 3d., truck loads; lime, white, 7s. 9d.; truck loads, 6s. 9d., slaked; do., 5s.; blue, 3s. 6d.; plaster line, 1s.; bricks at kiln, stock, 36s. to 42s.; wire cuts, 40s. to 50s. pressed, 65s. per 1,000, road transport getting scarce; salt and white glazed bricks, £27 10s per 1,000; tiles, roofing, £17½ square; glazed tiles, 10s. 6d. to 17s. 6d. yard; paving cement tiles, 8s. 6d. yard laid; terra cotta tiles, £15 per 1,000; reinforced concrete columns, 6 ft. plain, 22s. 6d., fluted, 24s.; fireclay bricks, £9½, good average, per 1,000; clay chimney pots, 80s. per doz.; fireclay, 37s. 6d. ton on rail.

Oils, paints, lead, oxides, glass: Linseed, raw, 29s., boiled, 29s. per 5-gall.; white lead, 72s. 6d. to 75s. per 100 lbs.; turpentine, 52s. 2 ¼ galls.; 10 1, 57s.; coal tar, imported, 10s. to 11s. per 5 galls.; oxide in oil, 32s. 6d. to 37s. 6d. per 100 lbs.; dry oxide, 21s. to 22s. 6d.; S.A. crude oxide, 12s. 6d.; linseed oil putty, 4s. 6d. per 12½lb. bladders; 30s. casks of 100 lbs.; grease A.F. axle, 23s. 6d. to 25s. per 100 lbs.; tallow, 9d. per lb.; White Rose paraffin, 15s. 9d. 2 5; Laurel do., 15s. 6d.; petrol, 26s. 6d. 2 1; motor oil, 6s. to

7s. 6d. per gallon; lubricating oils, 25s. per case; cylinder, 35s.; paints in tins, 10d. to 1s. per lb., according to quantity, and if ordered to be mixed, 15 per cent. on pre-war rates. British plate-glass, ½ in., 3s. 6d.; do., mirror, 4s. 6d.; window, 16 oz., 1s. to 1s. 3d. ft.

Chemicals: Mercury, £18½ per 75 lb. bottle; bichromate potash, 1s. 6d. lb.; chlorate, 2s. 6d. lb.; permanganate, 7s. 6d. lb.; alum, 9d. lb.; carbolic acid, 7s. 6d. lb.; borax, 66s. 100 lbs.; cyanide soda, 1s. 6d. lb.; hypo, 1s. lb.; acetate lead, 67s. 6d. 100lb.; litharge (assay), 75s., (commercial) 50s. 100 lbs.; zinc sheets and blocks, 1s. 3d. lb.; phunbago crucibles, 6d. per number.

Electrical Goods: Lamps, high volts., British, Holland & American, 16s. to 21s. wholesale, and 21s. to 27s. dozen, retail; carbon lamps, 7s. 6d. per dozen; pure rubber flex, 9d. to 1s. per yard; 3/20 coils of wire, 30s.; do., 3/22, 26s.; tubing, 12s. to 13s. 100 ft.; keyholders, 2s. 6d. each; round blocks, 3½ in., 4s. dozen; lamp holder cord grips, 15s. doz.; switches, 5 amp., 13s. to 14s. doz.; British glass shades, 24s. to 36s. doz.; Bohemian shades finished; porcelain shackles, 14s. 6d. doz.; do., bobbins, 16s. 6d. to 18s. 100; cleats, 18s. per 100; P.O. insulators, 18s.; motors, 3 h.p., about £28 to £35, new.

PERSONAL.

Mr. Edgar Pam has received a commission in the Royal Engineers (Tunnelling Corps), and is now in France.

ANSWERS TO CORRESPONDENTS.

All inquiries addressed to the Editor must bear the writer's name and full address. We cannot reply to inquiries by letter, but telegrams with replies prepaid will be answered. Correspondents are requested to write their names and pseudonyms distinctly.

"Investor."—In view of the growing interest which is being taken in many of the undertakings in which the Henderson's Transvaal Estates has large holdings, the shares should be held. The year ends March 31 and the accounts are submitted in June.

"Hen. Op."—(1) The option certificates are transferable simply by delivery. (2) When a settlement is obtained on the London Stock Exchange, which will be shortly. (3) Certainly hold on.

"Ajax."—In liquidation. An offer for the assets is being considered.

"W. H. H."—(1) Yes. (2) Certainly. (3) Next week.

"Shareholder."—The position will doubtless be fully elucidated at the meeting in a few days.

"J. H. G."—Next week.

"Gem Digger" (Paris).—Your letter has already appeared in a London publication, and the matter hardly concerns us here.

"Alex." (Capetown).—(1) There is less reason than ever to sell now. Prospects steadily improving. (2) A pure gamble.

"E. F." (Benoni).—Our information regarding the shipping company is too meagre to permit of our advising you to have anything to do with it.

When communicating with advertisers kindly mention the *South African Mining Journal*.

General Mining and Finance CORPORATION, LTD.

(Incorporated in the Transvaal.)

NOTICE IS HEREBY GIVEN that the Sixteenth Ordinary GENERAL MEETING of Shareholders of the GENERAL MINING AND FINANCE CORPORATION, LIMITED, will be held in the Board-room, General Mining Buildings, Johannesburg, on TUESDAY, the 4th day of July, 1916, at 11 a.m., for the following purposes:—

1. To receive and consider the Balance Sheet and Profit and Loss Account, and the Directors' and Auditors' Reports for the year ended 31st December, 1915.
2. To elect a Director in place of Mr. Martin Lucbeck, who retires in terms of the Articles of Association; but who is eligible, and offers himself for re-election.
3. To appoint an Auditor or Auditors for the ensuing year, and to fix the remuneration of the retiring Auditors.
4. To transact any other business which ought to be transacted at an Ordinary General Meeting.

The Share Transfer Books of the Corporation will be closed as follows:—

- (a) At the Head Office from the 30th of June to the 18th of July, 1916, both days inclusive.
- (b) In London from the 2nd of June to the 10th of June, 1916, both days inclusive.

Holders of Share Warrants to Bearer desiring to be present or represented at the Meeting should deposit their Shares at the places and within the times following:—

Johannesburg.—At the Head Office of the Corporation, General Mining Buildings, at least three days before the time appointed for the holding of the Meeting; or
London.—At the London Office (Transfer Department), Winchester House, Old Broad Street, E.C.4.

Paris.—At the Paris Office, 29, Rue Taillout; at the Bank de l'Union Parisienne, 7, Rue Chateaubert; at least thirty days before the date appointed for the holding of the Meeting.

By Order of the Board,

H. W. DALTON, Secretary.

General Mining Buildings, Johannesburg,
30th May, 1916.

Engineering Notes and News.

THE PAST YEAR'S ENGINEERING PROGRESS.—II.

GAS ENGINEERING.

The tendency of the present struggle to develop into a war of high explosives has placed additional responsibilities upon the gas-works, and early in the year it became known that drastic changes in the method of treating the gas were to be anticipated. The process of stripping the gas of its benzene hydrocarbons had long been carried out in coke-oven works where the illuminating quality of the gas is of secondary importance; and, although a proportion of the aromatic hydrocarbons resulting from the distillation of coal are, in ordinary practice, recovered in the tar, it was realised that a very appreciable loss was taking place by way of the gas. The larger concerns were originally approached with a view to adopting the oil-washing process as effectively put into operation by Dr. Davidson at Birmingham. The process consisted of scrubbing the gas with a pre-boiled oil petroleum oil in such a manner as to remove the low-boiling vapours of the benzene series. Meanwhile, the oil charged with these vapours was de-benzolised in special apparatus, the toluene being recovered and the benzene with the de-toluisolised oil being used *de novo*. It was somewhat unexpectedly pointed out by the South Metropolitan Gas Company that ordinary gasworks tar could advantageously be used as an absorptive medium, and in such a manner that, in the case of the majority of works no additional plant would be required. This process is not so efficient as that of Dr. Davidson, or as the cresote method commonly adopted in coke-oven works. Whereas cresote-washing will yield about 4 lbs. of toluene per ton of coal carbonised, the oil-washing process in general gives about 2½ lbs., and the tar-washing method (commonly known as the "C" process) about 1 lb. The action of the last-named is such that the illuminating power of the gas suffers practically no deterioration, although the revival of naphthalene trouble seems to coincide with its introduction. The new form of gas-holder as erected at Nuremberg is of distinctly novel construction in that the long-established principle of the floating bell is dispensed with, the holder being provided instead with a floating dome around the periphery of which a joint is maintained by a constantly circulating supply of water. In connection with the distillation of coal, a patent was granted to A. Rollason whereby the light hydrocarbon oils are increased by the introduction into the retort of a suitable catalyst. Limestone is the material employed, the quantity required varying in accordance with the composition of the coal in use, particularly as regards the ash content. From the point of view of the recovery of benzol and toluol the process has considerable possibilities in that a greatly increased quantity of these products is obtained. The character of the tar is appreciably altered, being of a benzenoid rather than a paraffinoid nature, gas yields are higher, and coke and ammonia show an improvement. The amount of the catalyst introduced varies from 4 to 6 per cent. by weight of the coal, and distillation is slowly carried out at a temperature of about 750°F. An important series of experiments was carried out at Michigan University by Professor White and Mr. Homer Hood in connection with the corrosive effect of the internal atmosphere of gas-heated furnaces. The investigators pointed out that whereas heating in a coal-gas atmosphere is followed by decarburisation, heating in contact with the products of complete combustion gives rise to oxidation. In an experimental plant erected at Michigan, it was found possible to produce an almost perfectly inert atmosphere by consuming the gas in two stages, that is, by working with a primary and secondary air supply.

THE CALCIUM CARBIDE INDUSTRY.

A large new factory is under construction in Lancashire for the British Carbide Factories, Ltd. This factory is being pushed forward as rapidly as possible by agreement with the War Office, and it is hoped that it will be ready in time to prevent any serious shortage of carbide; furnaces are being built to take no less than 6,000 k.w. each.

MINING ENGINEERING.

The use of coke-oven gas in gas engines for generating electric power is gradually being extended, but much more might be done in this direction by the utilisation of waste and small coal in the manufacture of producer gas, with the recovery of by-products where possible. Two or three installations of this nature are at work, one of them being used for firing steam boilers. Steam winding-engines are still preferred to electric, except in districts where a cheap source of electrical energy is available. It is surprising, however, to find how slow colliery-owners are in recognising the great economy to be obtained by the installation of suitable condensing plants. Millions of horse-power are daily being wasted by exhausting high-pressure steam direct into the atmosphere. The introduction of turbo-electric sets has done much to prevent this waste, and to the turbo-electric set has recently been added the turbo-air-compressor. Turbo-air compressors, combined with carefully-designed and constructed air-pipe installations, securing tight joints, will do much to lower the cost and increase the efficiency of compressed air-power transmission, which can be employed usefully for coal-cutting and haulage machinery and for face conveyors. Some success has been achieved by the introduction of small light main-and-tail rope haulage systems close to the working face to haul the tubs and replace manual labour or the use of small ponies. A new apparatus for washing small coal is being tried with hopes of considerable success. The plant consists of a tank filled with water in which a conveyor

works, removing the dirt. Compressed air is blown through the water in which the mixed particles of coal and dirt are suspended; the agitation produced by the air bubbling through the water raises the lighter particles of coal to the surface, and they are carried over a weir. The efficiency claimed is very high, and in one case where the *debris* from a washer containing 8 to 10 per cent. of fine coal was washed in the apparatus just described, the amount of fine coal ultimately lost amounted to from 1 to 2 per cent. only. The use of cement and reinforced concrete in the constructional work of collieries, both above and below ground, has made considerable advance, but in the sinking and lining of shafts, cement will probably have its greatest value in the future. In sinking through water-bearing strata the "cementation" process is proving successful. Where the ground consists of pervious rock, more or less fissured, cement grouting forced under pressure through a bore-hole into the rock, and allowed a little time to set renders the strata watertight. The process does not involve the employment of a lot of machinery and expensive tools, as in the case of the "freezing" and the Kind Chaudron processes. Further, the cost of iron tubing is saved, as the shaft is rendered watertight by the cement, and has a cement facing. Last year brought to a close the labours of a committee, originally appointed at a meeting of the American Mining Congress, at Denver, Colorado, who have been formulating a draft law governing quarrying and metalliferous mining that could be recommended to the several States for adoption. The model law is largely based upon the mining laws of this country, modified by the conclusions of the Royal Commission on Metalliferous Mines and Quarries, who have been investigating the subject probably in view of amendment of our legislation.

ELECTRICAL ENGINEERING.

The London and South-Western Railway, which is equipping a large suburban mileage for operation on the direct-current system, opened a portion of its routes to electrical working in October last, and on the remainder of the suburban system electric traction will be introduced at an early date. Good progress is also being made with the equipment of the Watford line of the London and North-Western Railway, and some sections of the North-London system. A direct-current system has been adopted, operated at a pressure of 600 volts on the conductor rail. The extension of the Baker Street and Waterloo Railway from Paddington to Queen's Park, where a junction is effected with the North-Western system, was completed in January, and through services from the tube railway over the new electric lines of the North-Western between Queen's Park and Willesden Junction were in operation during the greater part of the year. The electric traction system on the Lancashire and Yorkshire Railway will be partially in operation in the course of the next few weeks. This is a direct-current system with current at the comparatively high pressure of 1,200 volts. In connection with this electrification, and to provide ample power for the considerable mileage of track which will be ultimately converted in the district, a new power station has been erected on a convenient site at Clifton, near Manchester. The design provides for an ultimate capacity of 50,000 k.w., but the first section of the plant represents a maximum output of 10,500 k.w., which compares with 11,000 k.w. capacity for the new stations of the North-Western and South-Western Railways. In the United States, on the Milwaukee system, continuous current is to be employed at a pressure of 3,000 volts, and the equipment of some hundreds of miles of line on the overhead system is in progress. The locomotives which have been built for the electrification are claimed to be the largest electric engines yet constructed, and arrangements for regenerative working are embodied. The locomotives which are in service on the Norfolk and Western Railway have been specially designed in view of the very heavy gradients which are characteristic of the lines which are being electrically operated; single-phase current at a pressure of 11,000 volts is used on the overhead conductors, and is delivered to induction motors in the form of three-phase current for propulsive purposes, this method being, it is believed, the most suitable for the traffic conditions. It is stated that there are at the present time, either in operation or under construction, 1,490 single-track miles of single-phase system, and 3,720 miles of high-pressure d.c. system, 2,810 miles being for pressures between 1,200 and 1,500 volts, and 910 miles for pressures between 2,400 and 3,000 volts. Wireless communication has now been established between the United States and Japan through the Marconi stations at San Francisco and Honolulu, working in conjunction with the Japanese Government station at Funabashi, near Tokyo. The distance between San Francisco and Honolulu is 2,000 miles, and thence to the Tokyo station it is 3,355 miles. Communication between Tokyo and the United States was first established in July last, and the experimental working which has since been in progress has proved so successful that it is intended to start a commercial service at an early date. It is reported that under favourable conditions the San Francisco station has been able to read the signals sent out from Funabashi direct without retransmission from Honolulu. In addition to the development of trunk wire telephony across the American Continent, a great deal of progress was made in experimental working of wireless telephony over long distances in the United States, and speech transmitted by land lines from New York to Arlington was at the latter place transferred by automatic relays to the wireless transmitters, and thus sent on to Honolulu, a distance of about 4,000 miles from Washington.

*Abstracted from *The Times Engineering Supplement*.

IRON AND STEEL INDUSTRY.

In the Cleveland district the estimated production was 500,000 tons below that of the previous year, and similar conditions prevailed in Scotland and on the North-West Coast. One of the most important of the reforms carried out by the steel industry last year was the formation of a company, which was promoted by the leading British steel manufacturers to produce supplies of tungsten powder in England. There was no difficulty in obtaining the raw material, for the wolfram ores from which metallic tungsten and ferro-tungsten are produced mostly come from mines in different parts of the Empire. Several

factories are now engaged in supplying high-speed-tool steelmakers with this essential element. The need for producing sound steel ingots received fresh attention during 1915. Some of the newer methods of producing such ingots were further tested, and Sir Robert Hadfield published the results of an investigation of the properties of ingots manufactured by the Hadfield feeding process as compared with an ingot of the ordinary type. Tests carried out at the Pittsburgh Laboratory of the Bureau of Standards showed that the ingots made by the new process were free from appreciable segregation over 95 per cent. of the material. The employment of the electric furnace for steel refining is increasing, and a number of new installations have been made in the Sh field district.

Aeroplane Manufacture.

A valued correspondent writes:—To those who doubt the part Great Britain is taking in the war, the following short account of a visit to an aeroplane works in England may be of interest. In January, 1915, the Government arranged with a large engineering firm, which previous to the war had been engaged in general engineering, to put down the necessary plant to turn out aeroplanes. At first, I believe, it was intended to manufacture the body only, the Government supplying engines. Works covering an area of some 16,000 square yards were put down and by June the first aeroplane was flying. Subsequently machinery to build the engines was installed, and complete machines, including the engines, are now being turned out. At present some 900 men and girls are employed. The minimum wage for men was £2 per week, while the wages for girls worked out at from 16s. to £1 per week. Girls are only employed upon light work, such as oxy-acetylene welding, filing, drilling, etc. Taking the engine shop, the following points struck one as particularly interesting. British machine tools seemed to hold their own with foreign. One British machine tool was performing four distinct operations on the engine cylinders. (1) Rough-turning the outside of the cylinder, fins, etc.; (2) boring; (3) completing the rough-turning and finishing turning the outside; (4) boring and tapping certain portions of the cylinder. The cylinder was then ground to gauge, size and weight required, after which it is inspected for both size and weight. Some idea of the fineness of the work is gathered from the fact that in many cases the limit of size is a quarter of one-thousandth of an inch, while the limit of weight is 1 dram. In almost all cases the parts are ground to size, some of the grinding being done by holding the part to a face plate with a powerful magnet. Materials from which the engine parts are made are also carefully tested, e.g., every crank-shaft and connecting rod has a piece cut off and tested for tensile strength and impact. The hardness is also tested by a very simple and ingenious machine depending upon the impression made by a weighted ball, the size of the impression being measured with a microscope. The completed engine of 143 horse power weighed only 36 lbs., and could be spun round with the finger. It may be interesting to know that the gauges alone cost in the neighbourhood of £3,000, some being made locally and some purchased. Very instructive graphic charts are kept, showing the progress of all component parts (each part has a shop number), thus it may be that at any one time there are in stock 75 inlet valves and 80 connecting rods, the progress for each week being marked off in coloured chalks. The card system was, I noticed, in use in the stores. The ventilation and lighting of the shops were excellent. In the aeroplane body sections, it was most interesting to trace the timber through the various stages from the circular saw and

planing machine, busy on Austrian ash, to the assembling, gluing, screwing and binding with tape of the delicate component parts of the wings. Spruce, ash and walnut or mahogany are the principal woods used. The propellers are made by super-imposing and dovetailing, a set of seven pieces of walnut over a similar set, thus forming a cross. The edge of each piece of walnut projects sideways about an inch over the one below it. These are glued and pegged together and then spokeshaved and polished, making the beautiful propeller usually seen on these machines. All wood work, down to the smallest piece, is tested and stamped with a Government stamp. After the skeleton work of the planes are complete they are transferred to another department, where they are covered with unbleached linen, and then varnished with a special waterproof varnish, which strengthens and renders the whole framework taut. An interesting feature of these works was the fact that they were, I believe, designed, erected and are now being run by a young Scotchman, who had never seen the internal parts of an aeroplane before and whose only training for this special work was a week spent at another aeroplane factory. It was pleasing to hear from him that there was no organised slackening on the part of his workmen in the amount of work turned out in these shops.



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Comparative Statistics—Engineering Data.

Town.	Generation.	Condensing.	Cooling Tower.	Pressure of Generation.	Pressure of Distribution.	Alternating or Direct Current.	Mains.	Plant Capacity.	Maximum Load.	Units Sold per annum.	Number of Street Lamps.	Number of Consumers.
aAliwal North	Water	No	No	480-510	230 & 460	D.C.	Under	—	65	60,000	80	250
Benoni ..	Bulk	—	—	3,000	200 & 346	A.C.25	Both	450	350	—	259	924
Bloemfontein ..	Steam	Yes	No	2,000	347 & 200	A.C.50	Both	1,700	458	1,430,000	471	1,400
Boksburg ..	Bulk	No	No	2,100	230	A.C.	Both	400	400	370,000	450	740
cBulawayo ..	—	—	—	—	—	—	—	—	—	—	—	—
Cape Town ..	Steam	Yes	No	475 & 2,200	440 & 220	A.C. & D.C.	Both	2,625	1,984	5,031,716	1,675	2,772
Ceres ..	Water	No	No	110	110	D.C.	Over	35	30	4,200	100	75
dDundee ..	Steam	No	No	220	210-260	D.C.	Both	100	60	—	47	200
Durban ..	Steam	Yes	Yes	6,600 & 2,750	550, 100, & 200 A.C., ^c 500 D.C. ^e	A.C. & D.C.	Both	8,950	1,200	13,752,600	2,462	6,487
East London ..	Steam	Yes	No	2,200 & 550	110 & 550	A.C.50 & D.C.	Both	950	1,000	1,355,627	546	1,175
eGermiston ..	Bulk	No	No	—	—	—	—	—	—	—	—	—
Greytown ..	Steam	No	No	220	200	D.C.	Over	136	35	48,000	72	143
Harrismith ..	Steam	No	No	2,400	200	A.C.50	Under	185	70	102,975	98	298
Heilbron ..	Steam	No	No	250	230	D.C.	Over	50	25	56,821	50	130
Johannesburg ..	& Gas Steam	Yes	Yes	500 600 460 480 ^b 3,000 3,300	200 & 400 500 600 460 480	D.C. & A.C.50	Both	43,750	9,700	20,551,894	7,000	12,300
Kalk Bay ..	Steam	Yes	No	3,300	190 110	A.C.50	Both	300	200	—	284	203
bKimberley ..	Bulk	No	No	3,000	220	A.C.50	Both	—	—	838,742	191	1,078
King William's Town ..	Steam	Yes	No	2,200	220-225	A.C.50	Both	200	101	135,374	286	592
Klerksdorp ..	Gas	No	Yes	500	23a & 460	D.C.	Over	70	50	84,000	101	200
Kroonstad ..	Steam	No	No	250	230	D.C.	Both	180	120	394,500	115	413
Krugersdorp ..	Steam	Yes	Yes	480	460	D.C.	Both	450	340	755,340	315	825
Ladysmith ..	Steam	No	No	220	220	D.C.	Over	250	600	269,597	162	240
dNewcastle ..	Steam	No	No	550	250	D.C.	Over	78	65	2,000	300	175
Oudtshoorn ..	Oil	No	No	440 180	220-440	D.C.	Both	180	280	127,127	258	414
Parys ..	Water	No	No	160	230	D.C.	Over	30	40 amp	—	100	57
Pietermaritzburg ..	Steam	Yes	No	2,050 & 550	200 & 550	D.C. & A.C.100	Both	1,550	700	1,492,981	470	1,720
Port Elizabeth ..	Steam	Yes	No	250	250 & 500	D.C.	Both	1,200	812	—	715	1,688
Potchefstroom ..	Steam	Yes	No	250 & 500	240 & 480	D.C.	Over	150	65	108,596	120	301
Pretoria ..	Steam	Yes	Yes	300	250 & 500	D.C.	Both	3,300	2,000	4,273,000	1,470	3,500
Queenstown ..	Oil	No	No	230 & 460	220 & 440	D.C.	Both	140	230	80,000	240	364
eRondepoort ..	Bulk	—	—	3,300	400 & 230	A.C.50	Over	180	150	90,000	400	479
Salisbury ..	Oil	No	Yes	460	220 & 440	D.C.	Both	200	100	—	103	300
gStanderton ..	Bulk	—	—	—	—	—	—	—	—	—	—	—
Uitenhage ..	Steam	No	No	240	230	D.C.	Over	75	50	—	150	144
Wynberg ..	Gas	No	No	440	220	D.C.	Both	270	—	—	296	180
Wynberg ..	Bulk	—	—	3,000	220	A.C.50	Both	250	150	—	—	318

a Combined Electric and Water Schemes.¹

b Current purchased in Bulk from De Beers Consolidated Mines.

c Electric Light and Water supplied by Bulawayo Waterworks Co., Ltd.

d Supplied by Messrs. E. H. Gellender & Co., Ltd.

e Current supplied by Victoria Falls & Transvaal Power Co., Ltd.

f Plant installed in March, 1913.

g Current supplied by South African Railways.

New Patents.

56. (1) Hugh Archibald Wyndham; (2) James Whytock.—Improvements in and appertaining to apparatus for reaping or harvesting maize, Kaffir corn and other similar plants.
57. S. E. Joffe.—Iceless Chest.
58. Marie Olive Cronston.—Improvements in reinforced concrete.
59. Eric Stafford Huntley.—An improved gas producer.
60. John Massingberd Rogers.—A device for piercing and re-sealing tinned evaporative liquids, notably petrol, spirits, etc., all evaporative liquids supplied in tins.
61. John Frederick van der Velde.—Improvements in elastic or resilient tyres for road vehicles.
62. Marconi's Wireless Telegraph Company, Ltd., and Charles Samuel Franklin.—Improvements in or connected with aerial conductors for wireless telegraphy.
63. George Constantinesco and Walter Haddon.—Improvements in power transmission.
64. George Herbert Williams and Edward Sydney Luard.—Improvements in and relating to feed water heating and water circulating apparatus for locomotives and other boilers.
65. John Horace Bowden and Harry Francis Jackson Thompson.—Protection of electric cables.

66. Hendrik Matthys Nefdt and Jacobus Louis Brand Bester.—Improved valve for pumps and the like.
67. Hendrik Matthys Nefdt and Jacobus Louis Brand Bester.—Improvements in linings, to cylinders, piston rods and the like for pumps and the like.
68. John Thomas Hird and Sydney Joseph Crowther Wilkinson.—Improvements in shaft rollers, idlers and the like.
69. Stephen M. Smith.—Grapples.
70. John Chisholm.—Improvements in water heating geysers.
71. Henry Samuel Potter.—Improvements in the construction of hammer rock drills.

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South African Municipal Charges for Electric Current.

Town.	Private Lighting.	Power.	Tramways.	Heating or Cooking.	Street Lighting.	Bulk Supply.	Average obtained per Unit.	Discounts.
Aliwal North ..	9d.	4d.	—	4d.	6d.	—	6d.	—
Benoni ..	7d. to 4d.	2½d.	—	—	4d.	—	—	—
Bloemfontein ..	10d. to 6d.	4d. to 1d.	1½d.	2½d. & 1½d.	2½d.	—	4½d.	—
Boksburg ..	8d. & 7d.	4d. & 3d.	3d.	4d.	3d.	4d. & 3d.	8d.	—
Cape Town ..	7d.	2½d. to ¾d.	—	2½d. to ¾d.	5½d.	—	3-4½d.	—
Ceres ..	—	1/-	—	—	—	—	1/-	—
Dundee ..	1/- & 9d.	4d.	—	4d.	—	—	—	—
Durban ..	5½d.	2d to 2½d.	1d.	Min. & ½d.	£9 5s. ares. £2 incand.	1½d.	2-1	10%
East London ..	9d. & 3d.	3d. to ¾d.	1½d.	3d.	4d.	—	3-3	—
Germiston ..	5½d.	4d.	—	—	—	—	—	—
Greytown ..	1/-, 10d., & 9d.	4d. & 3d.	—	6d. & 3d.	8d.	—	8d.	—
Harrismith ..	1/-, 10d., & 9d.	—	—	6d.]	3d.	—	7-2d.	—
Heilbron ..	1/-	—	—	—	—	—	1/-	—
Johannesburg ..	6d to 1½d.	6d. to ¾d.	1-436d.	1½d.	1d.	¾d.	2-876	—
Kalk Bay ..	1/- to 6d.	—	—	—	—	—	—	—
Kimberley ..	6d.	2½d.	—	2½d.	2d.	—	3-884	1d.
King Williams Town ..	1/- to 10d.	3d.	—	3d.	6d.	—	10-29	—
Klerksdorp ..	9d.	6d. & 4d.	—	4d.	6d.	6d.	—	—
Kroonstad ..	9d.	6d.	—	6d.	6d.	3d.	—	—
Krugersdorp ..	6d.	3d. to 2d.	—	3d.	4d.	—	—	—
Ladysmith ..	9d. to 8d.	3d. to 2d.	—	3d.	6d.	2d.	4d.	—
Newcastle ..	1/-	—	—	—	4½d.	—	1/-	—
Oudtshoorn ..	1/-	10d.	—	—	10d.	—	—	—
Parys ..	9d.	4d.	—	—	9d.	—	—	—
Pietermaritzburg ..	9d. to 6½d.	3d. to 1½d.	1-5d.	2d.	6-5d.	1½d. to 8-4d.	3-78	—
Port Elizabeth ..	9d.	3d.	—	3d. to 1d.	—	—	—	—
Potchefstroom ..	1½/- to 4d.	4d.	—	—	—	9d.	7-5	—
Pretoria ..	6d. to 2d.	3d. to 1d.	1½d.	6d. to 2d.	1½d.	—	3d.	—
Queenstown ..	1/-	6d.	—	6d.	6d.	—	8½d.	—
Rodepoort ..	8d.]	4d.	—	8d.	2½d.	6d.	—	—
Salisbury ..	1/6	5d.	—	—	1/-	—	—	—
Springs ..	9d.	—	—	—	—	—	—	—
Standerton ..	9d.	—	—	—	4½d.	—	6-9d.	—
Uitenhage ..	1/-	—	—	—	6d.	—	—	—
Wynberg ..	7d.	2½d.	—	—	—	—	—	—

Before leaving the Rand last week, Mr. Foster Bain favoured *The Star* with some interesting views. He said that, as far as the East Rand was concerned, Messrs. Kotze and Mellor had hit the nail on the head. There were tremendous possibilities, but there was bound to be rich and poor ground. He, personally, did not feel that the evidence was conclusive. The East Rand area could not be taken as a whole. Was it reasonable to suppose that anyone coming from the outside who was presumably equally cautious, equally well informed, would come to a different conclusion than all the best men on the Rand. The Government must offer better terms, and in coming to such a conclusion there must be no idea of anything in the nature of holdings. If the Government wanted the East Rand developed rapidly they have to attract capital. If, on the other hand, they do not care whether it is developed rapidly or not, the ground will be mined eventually, even on onerous terms, because a mine now open will develop out, and will give enough information as to the adjacent ground to warrant development. He paid a warm tribute to the Government's expenditure on schools and railroads.

In the course of his annual report on Life Insurance Companies transacting business in the Cape of Good Hope in accordance with the provisions of the Life Assurance Act, 1891, of the Cape of Good Hope, the Acting-Secretary for Finance states, with regard to the results of 1914:—Non-Colonial Companies: The business of these companies at the close of the year 1914, stood at 35,109

policies, assuring £13,629,595. This shows an increase on the previous year's figures of 2,438 policies, and the sum assured of £797,331. Colonial Companies: At the end of the year 1914, the number of policies in force was 112,316, and the total sum assured £16,801,682. This shows an increase on the previous year's figures of 8,886 policies, and the sum assured of £972,135. Combining the whole business of the companies, non-Colonial and Colonial, for the year 1914, there is a total increase of 11,324 policies, and of £1,769,466 in sums assured. Reviewing the business of some of the individual companies, the following principal increases in the sums assured are noticeable:—S.A. Mutual, £639,230; National Mutual, £405,235; General Life, £314,026; Southern, £201,783; Norwich Union, £115,655; African Homes Trust, £79,265; United Provident, £53,990; Law Union and Rock, £31,271; Standard Life, £19,304; New York Life, £17,900; Gresham, £17,292; Commercial Union, £16,125; Sun Life of Canada, £15,100; General Accident, Fire and Life, £12,110. The following are some of the decreases, those below £10,000 have not been shown: Equitable of the U.S., £36,657; African Life, £36,601; Economic, £36,107; Manufacturers' (Canada), £20,564; Royal, £15,456; Star, £15,307; Union, £10,796. The progress of life assurance business in the Province may be observed from the following figures, showing the policies in force and the sums assured in the years 1899, 1904, 1909, and 1914:—1899, policies in force 36,128, sum assured £13,193,565; 1904, policies in force 78,216, sum assured £19,984,051; 1909, policies in force 82,982, sum assured £21,975,939; 1914, policies in force 147,425, sum assured £30,431,277.

THE RAILWAYS OF SOUTH AFRICA.†

Detailed Technical Description of the Different Railways of South and Central Africa.

[By A. J. BEATON, M.Inst.C.E.]

SOUTH AFRICAN RAILWAYS, 3ft. 6in. GAUGE.

ALTHOUGH the maximum speed on tangents for the South African Railways is only shown as 50 miles per hour on the speed diagrams, a speed of 55 miles per hour is permissible on a first class 80 lbs. track fully ballasted with broken stone;† this latter speed, however, still falls considerably below the speed attained on the Java State Railways on a 67 lbs. track. The maximum admissible speed on the secondary and branch lines of the South African Railways is, however, limited to 35 miles per hour on 60 lbs. rails, and to 30 miles per hour on a 45 lbs. track; these speeds are very much lower than those obtaining on the Japanese and Australian Government Railways with similar conditions of track. Although the relation of speed to the condition of the track cannot be reduced to a formula, practical experience indicates that there is obviously room for "speeding-up" on the 60 lb. and 45 lbs. tracks of the South African Railways; as even on some of the metre and three feet gauge railways, laid with rails ranging from 40 lbs. to 60 lbs., speeds of 40 miles per hour are in constant operation.

BEIRA AND MASHONALAND AND RHODESIA RAILWAYS.

This is the second largest system of 3ft. 6in. gauge railways in South Africa. The maximum speed on the Beira and Mashonaland and Rhodesia lines is the same as on the 60lb. track of secondary lines on the South African Railways. The Rhodesian lines are chiefly laid with steel sleepers and sand ballast; but, although 35 miles per hour is laid down as the maximum permissible speed, still speeds of 40 miles per hour are sometimes run.

CHEMIN DE FER DU KATANGA.

BELGIAN CONGO RAILWAY, 3ft. 6in. GAUGE.

The distance from the Rhodesian border to Bukama is 465 miles. The track is laid with 60lb. rails on steel sleepers, 1,940 to the mile. The ballast is composed of ferruginous limonite. The maximum speed is limited to 30 miles per hour, the heaviest axle load being 11 tons. The maximum radius of curves is 200 metres, and the speed allowed thereon is 22 miles per hour. The speeds of trains on this railway are practically the same as the permissible speeds on the 45lb. track branch lines on the South African Railways. There are two other systems of railways in this territory, viz., "Chemins de Fer Grands Lacs" and the "Chemin de Fer de Matadi." There is a portion of the railway between Kambova and Bukama still under construction. When this gap is completed it will be possible to travel by train and by river boats from Capetown through the heart of the Belgian Congo territory to the north of the River Congo on the Atlantic Ocean. The River Congo is navigable for a distance of about 2,000 miles from its mouth, with the exception of the cataracts at Stanley Pool and Stanley Falls. At these river barriers traffic is transferred from the river steamers to a railway, which skirts the rapids where the river is unnavigable, and transhipped and carried by river boats until the next cataract is reached, and so on. The section of railway from Boma to Leopoldville Pool is about 250 miles long, and is called the "Chemin de Fer de Matadi"; while the line skirting the Stanley Falls, about 70 miles long, and another railway link on the upper reaches of the Congo, between Kindu and Kongolo, about 200 miles in length, are called the "Chemins de Fer Grands Lacs." Particulars of gauge, speed, etc., on these branches are not obtainable.

CAMINHOS DE FERRO DE LOURENCO MARQUES.

LOURENCO MARQUES RAILWAYS, 3ft. 6in. GAUGE.

These railways comprise the Delagoa Bay-Ressano Garcia main line, the Swaziland-Umbeluzi branch and the Xinavane branch. The main line is 55 miles long, and is laid with 80lb. rails with 1,870 wood sleepers per mile. 6ft. 6in. by 9in. by 4½in., ballasted with crushed stone, the heaviest axle load being 15 tons; the maximum speed on straights is 40 miles per hour. This line joins the South African Railways at Ressano Garcia. The other two branch lines total 100 miles, and are built with 60lb. and 45lb. rails, with 1,780 and 2,135 sleepers per mile respectively. The axle load permitted on the 60lb. rails is 14 tons and 10 tons on the 45lb. track.

SHIRE HIGHLANDS RAILWAY, NYASALAND, LTD.,

3ft. 6in. GAUGE.

The fastest long distance run on this railway is 30 miles, at a mean speed of 30 miles per hour. This railway has a total length of 113 miles with 62 miles under construction. The first 42 miles are fairly easy, after which there are a series of 1 in 40 gradients with 5½ chain curves. The line rises 3,000 feet in 65 miles. Total weight of trains, 132 tons, engine and tender, 75 tons; total, 257 tons.

UGANDA RAILWAY, METRE GAUGE.

The total length of the railway is 770 miles, including 200 miles of branches. The longest run is 23 miles at an average speed of 23 miles per hour, the maximum speed allowed being 25 miles per hour. The minimum radius is 818 feet, and the grade is 1 in 66 for 325 miles from the coast, thence the grade is 1 in 50.

GERMAN SOUTH-WEST AFRICA; NOW S.W. PROTECTORATE.

The Government Railways in this Colony are 3ft. 6in. gauge, but of a light standard of construction, having low operating speeds. The rails weigh only 40½ lbs. per yard, laid on light section steel sleepers and ballasted with sand and gravel. The usual maximum speed allowed is 25 miles per hour; but with special permission of the Government 31 miles per hour is sometimes run. The foregoing information was furnished by the German authorities early in 1914, but since then the writer, who was in command of the South African Engineer Corps, in connection with the reconstruction of the damaged railways, during the German South-West African campaign, had opportunities of noting more details of the railways in the Protectorate than the German report revealed. The additional information thus acquired may be of interest, seeing that the Protectorate has now become a British possession. Prior to the commencement of the war in German South-West Africa, there were three classes of railways in operation in the Protectorate—viz.: (1) The State 3ft. 6in. gauge railways extending to about 870 miles; (2) the Northern State 2ft. gauge railway, 120 miles long; and (3) the Otavi Railway, 2ft. gauge, about 418 miles in length.

(1) THE STATE (CAPE GAUGE) RAILWAYS.

All the 3ft. 6in. gauge lines are constructed with 40½lb. rails laid on steel sleepers—twelve sleepers per 10 metre rail length. The sleepers are 6ft. 6in. long, and weigh 66½ lbs. each. The rails are fastened to the sleepers by means of a hooked scolopate weighing about 3 lbs. each, and clamped thereto with two hooked bolts having shouldered clips bevelled to suit the inclination of the foot of the rail. All joints are carefully squared, and very little space for expansion allowed. The total weight of the permanent way is about 182 lbs. per lineal yard. The line is ballasted with sand and gravel, the formation width being 18 feet in most places. The ruling gradient on the southern line is 1 in 40, with 200 metre curves as the minimum radius. The gradients north of Windhuk being 1 in 66. The type of construction is an excellent one for a light railway, with the maximum axle load of seven tons permitted by the Germans; the track is an ideal one for the class of country traversed and the traffic dealt with. Notwithstanding the light section of rail (40½ lbs. per yard) the British authorities have been running, for over 12 months, engines with axle loads of nearly 10 tons, without inflicting any apparent permanent damage to the track. A much higher speed than the 25 miles per hour authorised during the German régime might also be safely permitted. The writer observed a speed of over 35 miles per hour on a mixed train between Windhuk and Karibib, the engine being steamed with wood fuel.

(2) THE NORTHERN STATE RAILWAY.

2ft. gauge between Swakopmund and Karibib, about 120 miles long, was constructed for temporary military purposes in 1897-1902. This line is of very little practical use owing to the severe curves, steep gradients, and the light type of permanent way employed, the steepest grade being 1 in 19, while the rails weigh only 19 lbs. per yard, laid on steel sleepers, the total weight of the permanent way being only 76½ lbs. per lineal yard.

(3) THE OTAVI RAILWAY.

This is also a 2ft. gauge line, about 418 miles long. It is, however, a much better constructed line, having rails weighing 30 lbs. per lineal yard, laid on steel sleepers 26 lbs. each. The line is well ballasted, the ruling gradient being 1 in 66, with 150 metres as the minimum radius of curves. The heaviest axle load is 8 tons, and the superheated type of engine hauls a maximum load of 250 tons on the level, while long continuous grade of 1 in 66, the load hauled by the same type of engine is 170 tons. The maximum permissible speed of passenger trains is 25 miles per hour, although on straights a speed of 30 miles per hour was sometimes attained. A new engine recently designed by Mr. D. A. Hendrie, chief mechanical engineer, for the 2ft. gauge line, on the South African Railways, will be capable of hauling a total load of 330 tons on the level, and 180 tons on a long continuous grade of 1 in 66 on curves of 650 feet radius.

†From the *South African Railways and Harbours Magazine*.

There are not many long continuous stretches as regards ballast, of this class of track on the S.A.R. at present; but the main lines are being gradually brought up to this standard. The whole of the main lines between Pretoria and the four principal ports of the Union, as well as to Delagoa Bay, will be laid with 80 lbs. rails by the end of the year 1915.

†The line from Capetown to Wellington was originally laid as a 4 ft. 2½ in. gauge track.

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Electrical Notes.

THE RAND'S LARGEST WINDING ENGINES.

Particulars of Some Electric Winders of Record Size Now in Use.

The following table gives particulars of the largest electrically driven winding engines on the Rand. It was prepared by the S.A. Institute of Electric Engineers for the Association for the Advancement of Science:—

Name of Mine.	Name of Supplier.	Type of Winder.	No. of Winder Motors.	H.P. of Winder Motors (continuous rating).	Maximum Depth of Wind.	Weight of Rock per Wind.	No. of complete trips per hour.	Voltage of Winder Motors.	Speed of Winder Motors.
Crown Mines, Ltd.	Electrical—G.E.C. of America (S.P. Gen. Elec. Co.) Mechanical—Fraser & Chalmers, Erith, Eng.	Ward-Leonard. Cylindro-conical Drums.	2	2,000 H.P. each motor.	3,540 feet vertical.	8 tons.	44	1,000 v. across 2 motors in series.	53.5 R.P.M.
Crown Mines, Ltd.	Motor Generators—Siemens. Winder Motors—A.E.G. Mechanical—Fraser & Chalmers, Erith, Eng.	2 Ward-Leonard Winders Cylindro-conical Drums.	4 (2 on each winder).	1,420 H.P. each motor.	2,260 feet vertical.	8 tons.	45	1,000 v. across 2 motors in series.	53.5 R.P.M.
E.R.P.M. Hercules Shaft.	Messrs. The British Westinghouse Electric & Manufact'g Co., Ltd.	Ward-Leonard Cylindro-conical Drums.	2	750 H.P. each motor.	4,500 feet vertical.	8 tons.	20	1,000 v. across 2 motors in series.	33.3 R.P.M.
Village Deep, Ltd. and City Deep, Ltd. (6 similar equipments).	Messrs. The British Westinghouse Electric & Manufact'g Co., Ltd.	3-Phase Motors direct-coupled (2 Cylindrical Drum Hoists, 4 Whiting Hoists)	1	1,600 H.P.	3,600 feet vertical.	5 tons.	32	2,000 v.—3-phase—50 cycles per second.	100 R.P.M.
Bantjes Consolidated Mines, Ltd.	Messrs. Siemens, Ltd.	3-Phase Motor, geared to Cylindrical Drums.	1	1,470 H.P.	4,000 feet incline.	5 tons.	23	2,000 v.—3-phase—50 cycles per second.	250 R.P.M.
Consolidated Langlaagte G.M. Co., Ltd. (2 similar equipments).	Messrs. Siemens, Ltd.	Ward-Leonard	1	1,290 H.P.	Compound Shaft, 1,230 feet vertical and bend 3,000 ft. incline.	5 tons.	23	500 v. direct current across winding motor.	80 R.P.M.
New Modderfontein G.M. Co., Ltd.	Messrs. A.E.G. Electrical Co. of S.A., Ltd.	3-Phase Motor direct-coupled to Cylindrical Drums.	1	1,200 H.P.	2,000 ft.	3 tons.	45	2,000 v.—3-phase—50 cycles per second.	

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THE RAND AS A MARKET FOR ELECTRICITY.

Striking Statistics of Power Generated—Description of Producers—Plants and the Names of Their Makers—Figures that Reflect Growth of Electrical Power Supply.

The following figures were recently compiled and published by the S.A. Institute of Electrical Engineers, and presented to the S.A. Association for the Advancement of Science:—

ELECTRICITY GENERATED ON THE RAND.

Name of Power Supply Co., Mining Co., or Municipality owning Generating Plant.	Name of Generating Station.	No. of Sets.	MAKERS' RATING PER SET.		Maker's Name.	Type of Plant.	TOTAL CAPACITY OF STATION.	
			K.W.	K.V.A.			K.W.	K.V.A.
The Victoria Falls and Trans- vaal Power Co., Ltd., and the Rand Mines Power Sup- ply Co., Ltd.	Brakpan	2	3,000	4,000	A.E.G.	Turbine 3-phase	6,000	8,000
	Simmer Pan	6	3,000	4,000	A.E.G.	" " }	40,000	54,000
		2	11,000	15,000	A.E.G.	" " }	48,000	60,000
	Rosherville	5	9,600	12,000	A.E.G.	" " }	48,000	60,000
	Vereeniging	2	9,600	12,000	A.E.G.	" " }	43,200	60,000
		2	12,000	18,000	A.E.G.	" " }		
	TOTAL	19					137,200	182,000
Kleinfontein Estates Gold Mining Co., Witwatersrand Ltd.	Randfontein Estates Power Station	3	6,000		1 Westinghouse	Turbine 3-phase	26,000	—
		3	2,000	2 Parsons	" "			
		2	1,000	Parsons	" "			
East Rand Proprietary Mines, Ltd.	E.R.P.M. Central Power Station, Angelo Section	3	1,150	1,300	Bellis & Morecom	Reciprocating Turbine 3-phase	19,950	25,900
		1	1,500	2,000	and G.E.C.			
		1	3,000	4,000	Parsons			
		1	6,000	8,000	Willans and			
		1	6,600	8,000	Dick Kerr A.E.G.			
The Municipality of Johan- nesburg.	Municipal Power Sta- tion Johannesburg	3	3,000	3,750	Bellis & Morecom	Turbine 2-phase	13,250	—
		1	1,000	1,250	"	Recip'g		
		2	250	312.5	Allen	" "		
		2	1,000		Bellis & Morecom	Reciprocating		
		2	500		"	Direct Current		
		1	250		Allen	Plant.		
Kleinfontein Power Association	Kleinfontein Power Association, Central Power Station	3	2,000	2,475	Parsons	Turbine	6,000	7,425
The Langaagte Estate and Gold Mining Co., Ltd.	Langlaagte Estate Power Station	1	85	100	Bruce-Peebles	Reciprocating	2,085	—
		3	400		A.E.G.	"		
		1	500		Siemens	"		
		2	150		A.E.G.	"		
Goerz & Co., Ltd.	Geduld Proprietary Mines	1	800	1,000	Siemens	Exhaust Steam Turbo	800	1,000
	Princess Estate	1		170	"	Steam-driven	390	394
		1		64	"	"		
		1		160	"	"		
Neumann & Co., Ltd.	Witwatersrand Deep	1	1,000	—	Parsons	Turbine	2,500	2,250
		1	750	—	Brit. Whouse	Reciprocating		
		1	500	—	Gen. Electric	Curtis Turbine		
	Cons. Main Reef	1	1,000	—	Parsons	Turbine	1,500	—
		2	250	—	Gen. Electric	Rope drive		
	Wolhuter G.M. Co.	2	100	—	E.C.C. & B.G.E.	Rope-driven, and	800	—
						Recip.	750	—
Knight Central	1	750	—	A.E.G.	Rope-driven.		—	
General Mining and Finance Corporation, Ltd.	Aurora West	1	160	—	Mather & Platt	Direct coupled	360	—
		1	100	—	"	"		
		1	100	—	E.C.C.	"		
	Van Ryn	2	500	—	Brit. Whouse	Rope-driven	1,375	—
		3	125	—	Mather & Platt	Reciprocating Rope-driven		
Wegtersdorp Municipality	Power Station	2	225	—	Siemens	Reciprocating	450	—

WRIGHT'S ROPES.

NEW AND UP-TO-DATE FOUNDRY will undertake to supply Castings of every description in Brass, Gun Metal, Phosphor Bronze, and Acid-resisting Metal. Duplicate Orders a speciality.

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Quotations on receipt of particulars.

The Week's Meetings.

GINSBERG GOLD MINING CO.

The annual meeting of shareholders of the Ginsberg Gold Mining Co., Ltd., was held at 10.20 a.m. on May 26 in the board room, Consolidated Buildings. Mr. J. Munro presided, and there were also present: Messrs. P. Richardson, G. Inroth, J. F. Rutherford, C. Marx, F. L. Marx, H. A. Rogers, E. Brayshaw, W. L. White and Frank Hall (secretary).

The Chairman said: The directors' report and audited accounts for the year ended 31st December, 1915, as well as the reports of your consulting engineer and mine manager, are now submitted for your approval and confirmation. For the year under review a slight decrease is shown in the gross profit as compared with that of 1914, owing to the grade of the ore mined being lower than in the previous year, and this decrease would have been greater had there not been an increase of 6,705 tons in the tonnage milled and a reduction of over 5d. per ton in the working costs. Two dividends of 7½ per cent. each were declared during the year, and, after allowing for contributions under the Miners' Phthisis Act, the Profits Tax, Special War Levy, Special Gold Charges and depreciation, the amount carried forward to next account is £18,653 18s. 5d. In connection with the Special War Levy, it was understood that this would only apply to the Government's financial year ending 31st March, 1916, but, as you are aware, the Government have decided to re-impose this levy for another year.

Ore Reserves.

The ore reserves were, as usual, re-calculated at the end of the financial year, and it is estimated that they amounted to 278,118 stopping tons of an assay value of 5.5 dwts. over a stopping width of 68 inches, and in addition it is anticipated that a considerable tonnage will be available from reclamation. The consulting engineer, in his report, remarks that the development of the North Section of your property has made steady progress, and on the 9th and 10th levels reef of quite satisfactory value has been developed, and he is of opinion that a large tonnage of payable ore will be obtained from this portion of the mine. Since the close of the year the development of the mine has been practically confined to the driving of the 10th level east on the North Reef. This point is now within 520 feet of our boundary. There has been a little secondary development in the upper levels of the North Reef, and a fair amount of low-grade tonnage has been recovered from what was formerly supposed to be an unpayable area. The values, however, have been on the low side, except for the 10th level east drive, which has been consistently good for some time past. The monthly profits for the first four months of this year averaged £3,600 against £3,800 for the whole of last year. I now beg to move the adoption of the directors' report and the accounts.

The report and accounts were adopted. Messrs. E. Brayshaw and C. Marx, retiring directors, were re-elected, and the auditors, Messrs. J. P. O'Reilly and Henry Hains, reappointed.

NEW PRIMROSE.

At the annual meeting of shareholders of the New Primrose Gold Mining Company, Limited, held on May 26 in the board-room, Consolidated Buildings, Mr. J. Munro presided, and others present were Messrs. P. Richardson, C. Marx, F. L. Marx, G. Inroth, J. F. Rutherford, E. Brayshaw, A. Sprinz, E.

Rothschild, W. L. White, and Frank Hall (representing the secretaries).

The Chairman said: For your consideration I beg to submit the directors' report and accounts for the year ended 31st December, 1915, together with the reports of your consulting engineer and mine manager. At our last annual meeting I informed shareholders that heavy rains at the beginning of the year seriously interfered with our underground operations. Several of the working places were temporarily closed, and as a consequence the tonnage crushed during the year was less, as compared with 1914, by 16,250 tons. The ore treated showed a falling-off in recovery value, as compared with 1914, of nearly 4s. 6d. per ton, while the working costs were reduced by 4d. per ton. The profit from all sources amounted to £71,366 6s., a reduction of £64,735 as compared with the previous year. Two dividends, of 10 per cent. and 7½ per cent. respectively, were declared during the year, and, after providing for contributions under the Miners' Phthisis Act, Mining Taxation Act, Special War Levy and Special Gold Charges, the balance carried forward to next account was practically the same as at the end of 1914. For the past 10 years there has been a gradual falling-off in recovery value, but against this, up to 1913, we were able relatively to reduce our working expenses, and the profit was well maintained. In the two years ending 1915 the recovery value fell from 27s. 10d. per ton to 17s. 9d. per ton, which accounts for the serious fall in profits. A reduction of 1s. 3d. per ton in working costs was effected during the same period, but this did not materially influence the result.

The Prospects.

It was estimated that at the end of the year the payable ore reserves amounted to 265,623 stopping tons of an average assay value of 5.5 dwts. over a width of 56 inches, and it is expected that a large tonnage will also be obtained from reclamation. Your directors, therefore, anticipate that the mine will be run at a profit for a few years yet. For the first four months of the current year the average recovery value of the ore milled dropped to 15s. 6d. per ton, and the profit for the period was £12,364. What development remains to be done on this mine is largely of a secondary kind, and for the purpose of exploring and opening up odd pieces of ground which have not been tapped by the main headings. Some encouraging results have been obtained at one or two points, but on the whole it may be said that the possibilities of the mine in this direction are to a great extent exhausted. Working costs have been kept at a reasonable level, considering the times, but it is only fair to say that we do not anticipate any increase on the present scale of profits in view of the exhaustion of the richer ore in the mine. In October, 1915, Mr. H. L. Krause was appointed manager in succession to Mr. Charles Marx, jun., who resigned to assume the management of another mine of the Group. I now beg to move the adoption of the directors' report and accounts.

Mr. Rothschild said he would like to ask whether the directors had considered the possibility of obtaining more mining ground in view of the company being within measurable distance of being worked out. It would be a pity if this well-known company should disappear, seeing that it had all the facilities for going on, besides having a well-equipped plant that would otherwise be sold as old iron. He would certainly suggest that the board take into consideration the question of getting more ground.

The Chairman: The directors have not considered the question. Personally I do not feel exactly that the company should in a sense gamble in ground with the shareholders' money. But I think that Mr. Rothschild's suggestion might be considered by the board, and if we see any chance of securing anything by the investment of a few thousand pounds we might consider it. I think it is a very good idea that we should secure something good for the company, such an old company, so that the name would not die out.

Mr. A. Sprinz thought they should leave it to the directors entirely; they could do the best for the company.

The Chairman: It appears to be the desire that we should do something of that kind. The directors will go into the question. I am sure we feel as greatly as any shareholder the desire to keep this name in existence. It has been associated with the firm since it started; as a matter of fact, it was the first company that the firm took in hand on these fields.

The report and accounts were adopted. Messrs. E. Brayshaw and S. P. Joel (retiring directors) were re-elected, and the auditors, Messrs. F. W. Diamond and English and J. P. O'Reilly, were reappointed.

CONSOLIDATED LANGLAAGTE.

Mr. John Munro presided at the annual meeting of shareholders of the Consolidated Langlaagte Mines Ltd., held at 11.20 a.m. on May 26 in the board-room, Consolidated Buildings. There were also present Messrs. G. Inroth, P. Richardson, J. F. Rutherford, C. Marx, J. H. Ryan, H. W. Anderson, E. H. Danckwerts, F. Hilner, E. Lewin, P. Boulton, W. L. White and Frank Hall (representing the secretaries).

The Chairman said: I have much pleasure in submitting your directors' report and the audited accounts for the twelve months ended 31st December, 1915, as well as the reports of your Consulting Engineer and Mine Manager. You will observe from the balance-sheet that the purchase of £50,000 of debentures reported at last year's meeting of shareholders, and the first annual drawing of £25,000 made in May last reduces the debenture liability to £195,000. In January of this year a further £20,000 of debentures were purchased at par, and the second drawing of £25,000 will take place to-morrow. Most satisfactory results have attended the operations for the period under review. The tonnage crushed exceeded that for 1914 by 58,200 tons. The recovery value shows an increase of about 3d. per ton, and working costs were reduced by a similar amount. The gross profit including rents, interest and dividends from investments, was £363,868 5s. 8d., exceeding that of the year 1914 by £46,046. Two dividends of 12½ per cent. each, absorbing £237,500, were declared during the year, and after allowing for payments under the Miners' Phthisis Act, debenture interest and expenses, the Profits Tax, Special War Levy, Special Gold Charges, and depreciation, the amount carried forward is £75,196 0s. 1d. There is an increase of £22,501 9s. 10d. in the value of "stores on hand," your directors having deemed it advisable to lay in a much larger stock than usual, in view of a possible shortage and consequent difficulty in purchasing month by month as required.

Special War Tax.

Reference is made in the directors' report to the amount of £13,688 4s. which is this company's estimated proportion of the "Special War Tax" levied by Par-

liament on the mining industry for the financial year ended 31st March, 1916. This tax, which, when first levied, was understood to apply only for one year, has by recent legislation, been reimposed for the Government's financial year ending March, 1917. The Bank of England now advances 98½ per cent of the value of the gold deposited with it by mining companies instead of 97 per cent, as originally agreed upon, and has paid the difference on all gold deposited with it prior to the new arrangement coming into force. The 1½ per cent retained is estimated to cover cost of realization, but the account will be adjusted when the gold is sold. The item "special gold charges," £6,637 16s. 9d., mentioned in the report is estimated to cover the increased cost of freight, insurance, etc., on the gold deposited with the bank before the new arrangement came into force. The payable ore reserves were re-estimated at the end of the year and the calculations gave the satisfactory result of 2,248,656 stopping tons of an average assay value of 6.5 dwts. over a stopping width of 49.24 inches.

Native Labour.

Native labour has recently fallen off somewhat, the numbers varying from 3,592 at the end of December, to 3,073 at the end of April. We are advised that this decrease in the labour force is to some extent due to recent regulations issued by the Government in connection with the advances to natives before attestation. So far we have suffered no shortfall in tonnage, as there were accumulated some 50,000 tons of broken rock in the stopes, from which we have been, and are still able to draw, whilst labour is short. You will have noticed the item of £2,750 in the balance-sheet for "advance stopping account." This account was opened during a period when, on account of extra labour, the rock broken was considerably in excess of the requirements of the reduction plant. During April £1,700 of the amount was charged against working costs, and the balance will in all probability be wiped out during the present month. The reserve of broken ore will not be exhausted, however, during May, there still remaining a considerable quantity in the stopes, and standing in the books at nothing. I think you will agree that the policy is a sound one, as we have kept our costs fairly uniform, and what is more important, we were not compelled to stop a number of machine stopes, with the consequent changing of men and resulting inefficiency. As foreshadowed in the annual report, the percentage of rock obtained from reclamation has fallen off considerably, being for April only 14.56 per cent. of the tonnage hoisted, as against 23.54 per cent. for the year under review. The replacement of this reclamation rock by ore from stopes will necessarily mean some little addition to working costs as compared with 1915. Development during the quarter ending March 31st disclosed the following results: Footage sampled, 2,470; payable, 1,130 feet of an average value of 21.5 dwts. over 18 inches of reef. Unpayable, 1,340 feet, averaging 5.6 dwts. over 18 inches, which is not quite as high as in previous periods, but variations of this kind do occur occasionally. Our reserve, however, is considerable, and with shaft sinking and development well ahead of requirements we are in a singularly favourable position to tide over a period when values are below the average. The recovery value of the ore treated since the commencement of the year shows a slight improvement, but costs were 1s. 6d. per ton higher and profits suffered as a consequence. I now beg to move the adoption of the directors' report and accounts.

Mr. H. W. Anderson, in seconding, said he would like to congratulate the

board and the management on the very excellent results achieved during the year under review. It was most satisfactory to note the considerable increase in the tonnage milled. An average of 53,000 tons per month was certainly a fine performance for the plant and spoke well for the efficiency shown by the employees at the mine generally in a year when there must necessarily have been considerable dislocation owing to the constant changes brought about by the war. The result, too, was in spite of the well-known difficulties attending mining operations throughout these fields during the year, yet at the Langlaagte working costs were not adversely affected, but on the contrary, showed a slight decrease, this result being partly due no doubt to the board's foresight in laying in considerable surplus stores, which action was to be commended. The accounts disclosed a most satisfactory state of affairs, the debenture liability formerly standing at the reduced figure of £195,000 having been since further reduced to £150,000. A strong cash position was maintained, which though always sound policy, must be specially so in these uncertain times. Altogether he felt confident that under the present control, whatever difficulties may be ahead, whether mining or financial, they would be ably dealt with.

The report and accounts were adopted.

Messrs. J. Friedlander and J. Munro, retiring directors, were re-elected, and Messrs Douglas, Low and Co., and Henry Hains were re-appointed auditors.

WITWATERSRAND G.M. CO.

At the annual meeting of shareholders of the Witwatersrand Gold Mining Co., Ltd., held on May 26th in the Board Room, Consolidated Buildings, Mr. J. Munro presided, and there were also present Messrs. J. Dale Lace, E. Brayshaw, P. Richardson, G. Inroth, J. F. Rutherford, L. Edwards, W. Ross, C. A. C. Tremere, F. Hilner, E. Rothschild, M. Dold, F. L. Marx, A. Sprinz, W. L. White (consulting engineer), and Frank Hall (representing the secretaries).

The Chairman said: The directors' report and audited accounts for the year ended 31st December, 1915, are now submitted for your consideration. The reports of your Consulting Engineer and Mine Manager, which are attached, give the fullest information regarding the year's operations. Briefly reviewing the balance-sheet, the only item on the debit side which calls for comment in "sundry creditors," £32,367 3s. 10d. This shows an increase of £10,857 1s., which is entirely accounted for by "gold charges" unpaid. These are charged up monthly, but only paid when the gold is realised. On the credit side of the balance-sheet you will observe that we have adjusted the "property account" by deducting the agreed valuation of the Primrose township, which now appears under a separate heading, and by adding the cost of the claims purchased from the Witwatersrand Deep, Ltd., which were paid for in 1915, and are now registered in your company's name. The amount standing to the debit of the Primrose township represents the book value of the stands unsold at the end of the year. In this connection I would mention that the sale of stands in this township is progressing satisfactorily and it is anticipated that the demand will increase.

Improvements Completed.

During the year under review a sum of £60,398 11s. 1d. was expended on permanent works, buildings and machinery and plant, which, after deducting depreciation, now stands at £332,522 4s. 5d. against £289,624 16s. 6d. at the end of 1914. I am pleased to announce that the programme for the improvement of our equipment and for the opening up of the southern section of the property, which was entered upon several years ago, is now practically completed and very little further capital expenditure, with the exception of shaft sinking, has to be incurred. The renovation of the battery, which was commenced nearly two years ago, was completed during this year. This work was carried out without interfering with the ordinary running of the mine and the expenditure incurred was charged to working costs. Turning now to the profit and loss account, it will be seen that the profits earned were practically the same as in 1914. There was an improvement of 1s. 5d. per ton in the ore treated, but this was counter-balanced by a relative increase in working costs. The increased cost of all mining stores accounts for the higher working costs. During the year two dividends of 25 per cent. each, which absorbed £234,812 10s., were declared, and after providing for taxation and depreciation, a balance of £83,659 10s. 4d. is carried forward to the current year's account. At the end of the year the ore reserves were recalculated at 1,480,423 stopping tons of an assay value of 6.85 dwts. over a stopping width of 60.4 inches. There are 120,000 tons of ore classified as doubtful, and 50,000 tons of Main Reef footwall in addition to the ascertained payable ore reserves, which it is expected will be treated at a profit.

New Plant Working.

The new sorting and crushing plant at the vertical shaft is now in regular operation; the ore milled from this section during April amounted to 8,830 tons and the values obtained were satisfactory. The amount of rock from this shaft will steadily increase from now on as the stope faces are opened up and will compensate for any falling-off in the tonnage available from the other workings of the mine. During the first four months of this year the southern incline shaft has been sunk a further distance of 265 feet, making a total of 2,015 feet to the end of last month. The importance of this work is being kept steadily in view and it is hoped the shaft will be completed before much stopping becomes necessary in the area served by it. This shaft is of three compartments, and is served by one electric engine and two eight ton skips. Development in this area showed rather variable results at first, no doubt due to the disturbed nature of the ground passed through, but since the beginning of this year a marked improvement has occurred and reef of good width and value is being developed. For the first four months of this year there was a slight decrease in the value of the ore milled and a small increase in costs, which accounts for a slight decrease in the monthly profits. I now beg to move the adoption of the directors' reports and accounts.

Mr. J. Dale Lace Seconds.

Mr. J. Dale Lace, in seconding the motion, said:—The position as shown by your chairman must in every respect be regarded as eminently satisfactory. I think the financial position of the company particularly should be emphasised, for practically at the end of the company's year you had in hand in cash on deposit, cash at bankers, and gold in transit, a sum of £230,840 15s. 3d., against which you had to pay your divid-

end of 25 per cent. for the half-year, totalling £17,406 5s. Government taxes under Mining Taxation Act at sum of £21,935 18s., under Act No. 24, 1915, £10,967 19s., and assessment of Income Tax a sum of £1,638 18s. 5d. A total of £34,542 15s. 5d. direct taxation as entirely apart from all indirect taxation by Customs, railways, harbours and the like. Some taxation isn't it? And where would this country be without the mines? And still there are some unbalanced, immoderate people who would say to the devil with the mines. Gentlemen, this company is doing its duty at every point, in money, in taxation, in other contributions and in men. Here anyhow, we in Johannesburg, the vast majority of us at least, are endeavouring to do our duty to our Country and our Flag. As we are not a political party I do not mean to pursue that subject further, but I think it is right that our shareholders should know that in keeping the mines going we have ever before us also our first sentiment of the privilege and necessity, that of keeping the Flag flying. Returning again to the mining business of the year, it must be gratifying to find your work of the last few years approaching a satisfactory completion, for you have to-day your south shaft on the T-piece practically finished in itself, and its equipment, I am sure, is second to none anywhere, all that is most modern and up-to-date having been used in its installation. Its completeness testifies to the capacity and enterprise of all those particularly associated with the management and engineering part of the business. What is still better, is that our development, particularly at the new shaft, has in width and values so far proved eminently satisfactory. After what I have said in respect of the staff I am sure you will allow me the opportunity of moving, when seconding the adoption of the report and accounts, a hearty vote of thanks to the management, the mining engineers and all the staff whose loyalty and untiring energy have contributed so greatly to the results which have been achieved.

The report and accounts were adopted. The meeting confirmed the appointment of Mr. G. Imroth as director in place of the late Sir George Farrar, and the retiring directors, Messrs. J. Dale Lace and Henry Nourse, were re-elected. Mr. Chas. Stuart and Messrs. F. W. Diamond and English were reappointed auditors.

NEW UNIFIED.

At the annual meeting of shareholders of the New Unified Gold Mining Company, held on May 26, in the board-room, Consolidated Buildings, Mr. J. Munro presided. There were also present Messrs. E. H. Danckwerts, E. Brayshaw, J. F. Rutherford, G. Imroth, F. L. Marx, C. Marx, P. Richardson, C. A. C. Treneer, A. Sprinz, W. L. White (consulting engineer), and F. Hall (representing the secretaries).

The Chairman said: The directors' report and audited accounts for the year ended 31st December, 1915, as well as the reports of your Consulting Engineer and Mine Manager, have been in your hands for some time and are now submitted for your consideration. The tonnage crushed during the period under review was 6,394 tons more than that crushed during 1914, due in the main to the erection of a second tube mill. The recovery value of the ore milled showed a reduction of 1,217s. per ton, but against this, working costs were reduced by slightly over 9d. per ton, and the gross profit for the year was consequently only £1,284 less than for 1914. Two dividends of 10 per cent. each were declared during the year, and, after providing for these

and payments under the Miners' Phthisis Act, the Profits Tax, Special War Levy and Special Gold Charges, etc., a balance of £18,837 5s. 1d. is carried forward to next account. Following our usual practice the ore reserves were re-estimated at the end of the year, and it was calculated that there were 399,140 stopping tons in the Main Reef Leader and South Reef of an assay value of 5.7 dwts. over a stopping width of 44 inches. In addition there are exposed 192,000 tons of payable Main Reef, which have not been taken into the ore reserves. The Main Reef Leader development is now completed, and there only remain those points on the South Reef which offer sufficient encouragement. During the past few months the mill has been reconditioned, and a slight increase in tonnage is now looked for. From the Manager's report you will note that 56 per cent. of the ore mined came from the Main Reef, but its value shows a little falling off, and it is possible we may have to reduce somewhat the quantity of ore from this reef in the near future. The average monthly profit for the first four months of this year was £4,346 against an average of £5,600 in 1915. I now beg to move the adoption of the directors' report and accounts.

The report and accounts were adopted.

The retiring directors were Messrs. G. Imroth and J. Munro and they were re-elected.

Mr. F. W. Bompas and Messrs. Ferryman and Golby were reappointed auditors.

GLENCAIRN MAIN REEF.

The annual meeting of shareholders of the Glencairn Main Reef G.M. Company was held on May 26th in the board-room, Consolidated Buildings. Mr. John Munro presided, and there were also present Messrs. G. Imroth, C. Marx, E. Brayshaw, P. Richardson, J. F. Rutherford, Mrs. Bloemfield, and Mr. Frank Hall, representing the secretaries.

The Chairman said:—I beg to submit your directors' report and audited accounts for the year ended 31st December, 1915, together with the reports of your consulting engineer and mine manager. The tonnage crushed during the period under review was practically the same as last year, but, owing to the depletion of the payable ore reserves, a decrease of £6,247 was reflected in the gross profit. There was a slight decrease in the working costs, which would have been greater had it not been for the fact that during the year the prices of many of the essentials connected with mining have increased to a very large extent. Your directors were able during the year to pay a dividend of 5 per cent., but in view of the falling off in the value of the grade it is doubtful whether the present rate of dividend can be maintained. After payment of the dividend and making allowances for payments under the Miners' Phthisis Act, the profits tax, special war levy, special gold charges, and depreciation, a balance of £1,575 3s. 5d. is carried forward to next year. You will notice from the consulting engineer's report that the payable ore reserves at the end of last year amounted to 117,490 stopping tons of an assay value of 4.4 dwts. over a stopping width of 56 inches. In addition to this there are 393,140 tons of lower-grade ore in the mine which is classed as doubtful. It is anticipated that a portion of this ore will prove payable, and that a considerable tonnage will be obtained from reclamation. In addition to this, there is a large quantity of accumulated slime on the property which cannot be dealt with at present as the cyanide works are only able to treat the current sands from the mill. When the ore reserves are exhausted and the mill closed down the treatment of this slime will be taken in hand and should yield a fair profit. This operation should extend over a number of years. For the first four months of this year working costs in-

creased by .495s. per ton milled, and the monthly profit averaged £930, as compared with an average of £2,279 per month for 1915. You will have gathered from what I have said that there is little prospect of an improvement in the profits from mining operations. I now beg to move the adoption of the directors' report and accounts.

The report and accounts were adopted. Messrs. C. Marx and S. B. Joel, retiring directors, were reappointed, and Messrs. Henry Hains and J. P. O'Reilly were reappointed auditors.

GOVERNMENT G.M. AREAS.

Mr. J. Munro presided at the annual meeting of shareholders of the Government Gold Mining Areas (Modderfontein) Consolidated, Ltd., held on May 26th at 3 o'clock in the Board-room, Consolidated Buildings. Others present were Messrs. G. Sonn, G. Imroth, E. Brayshaw, P. Richardson, C. Marx, A. Rayno, R. E. Philpott, E. J. Matthews, A. C. Hughes, F. W. Baxter, E. Danckwerts, J. E. Johns, F. Lewin, A. Sprinz, T. Lynch, W. L. White (consulting engineer) and Frank Hall (representing the secretaries).

The Chairman said: I have pleasure in submitting for your consideration and approval the directors' report and audited accounts for the year ended 31st December, 1915. The reports of your consulting engineer and mine manager, which contain the fullest details of the year's operations, are attached. Our programme during the year has been of a two-fold nature: Firstly, our crushing operations, and secondly, the preparations for the additional 300 stamps now in course of erection, and the development of the mine which the feeding of the new mill entails. In both instances the results achieved may be considered extremely satisfactory. For the period under review 576,110 tons were crushed, resulting in a working profit of £156,210 5s. 7d., adding thereto the amounts received from rents, sundry revenue, etc., the gross profit for the year amounts to £160,611 19s. 10d.; from this should be deducted the Company's contribution under the Miners' Phthisis Act, special gold charges, and the Government's share of profits, resulting in a carry forward to next account of £111,593 15s. With regard to the Government's share of profits which appears in the accounts as £16,429 5s. 2d., I should mention that this amount is subject to adjustment with the authorities. The loan account at 31st December last stood at £184,504 4s. 5d., and you will observe under the heading of "contingent liabilities" an amount of £140,516 2s. 9d., which represents commitments in respect of machinery and plant on order. Arrangements to liquidate the company's indebtedness will be made as soon as circumstances permit. On the credit side of the balance-sheet the main items of interest are gold in transit and cash at bankers, accounting for £53,000, and stores on hand and in transit, £41,000. The latter item is considerably higher than it would be in normal times, but your Board thought it wise, in view of existing conditions, to ensure itself as far as it could against a shortage of mine requirements.

Mill Results.

It is a source of satisfaction that the mill results during the year have shown a steady improvement, and you will observe from the consulting engineer's report that whilst the grade in January, 1915, was 20.403s., it had risen to 26.877s. in December last, and in view of the satisfactory development results I have no hesitation in saying that further improvement may be expected in this direction. In the earlier part of my speech I referred to the new plant, and in this connection I can tell you that good progress has been made with the erection of the

additional 50,000 ton mill. Deliveries have been, on the whole, very satisfactory considering the abnormal times in which we are living. The only portions of the plant which have been seriously delayed are the two electrical winders for the underground inclines in the north section. These were being made in Scotland, but work on them has been entirely suspended by order of the Home Government. Arrangements have just been made, however, to ship them as they are and they will be completed locally. This will probably mean some little delay in the starting of the new plant, but we are hopeful it will not be in any way serious, and I think I am on the conservative side in assuring you that it will be in operation well before the end of this year. The additional underground construction work is also making good progress; the extra sinking of the two south vertical shafts, referred to in the consulting engineer's report, has been completed and the cutting of the main ore bins is in hand. The widening of the two northern inclines and their equipment has also made good headway. The distance between the northern and southern shafts is approximately 7,000 feet and the first connection—that between the north-east and south-east shafts—will be made within the next two months. The ventilation of the mine is a problem that is receiving our careful attention. A 250,000 cubic feet per minute capacity fan has recently been ordered and will shortly be installed at the north-east shaft; a second fan of 60,000 cubic feet per minute capacity is to be installed at the north-west shaft as an auxiliary to the large fan. We are hopeful that the installing of these fans will secure a good and sufficient distribution of air to every part of the mine.

Mine Development.

And now, gentlemen, I come to an item which is probably the most interesting of all to shareholders, and in our case, a very pleasant one, i.e., the development of the mine, for however fine a plant you may erect, and however efficient the management, they are of little avail unless you have good payable values in the mine. To keep a plant such as ours in commission needs development well ahead of the mill's requirements. The management has, therefore, pursued a policy of vigorous development which fortunately has been accompanied by a substantial improvement in the value of the ore opened up.

Whilst at the end of 1914 our reserves amounted to 2,063,844 milling tons of an assay value of 5.8 dwts., they reached 3,665,000 tons at the end of 1915, and the assay value of this total quantity had increased to 6.9 dwts. over a stopping width of 68 inches. It is customary for us to supplement our records for the year under review as far as we can with information in regard to the work accomplished in the new year, and I have pleasure in giving you the following results from the 1st January to the 30th April:—

Our profits have steadily increased month by month, and for the first four months of this year show an increase of £3,000 net month over the average of 1915. Development has been pushed ahead, and our reserves have been augmented by about 433,000 tons of a grade quite up to the reserves at the end of the year. You will agree with me, gentlemen, that under such circumstances we have every right to look forward to a prosperous career for this company, and that we may confidently anticipate an improved ratio of profits when the new plant is running. Since the close of our financial year Mr. Douglas Christopherson, manager of the Consolidated Gold Fields of South Africa, has joined the board of directors. Confirmation of his appointment will be asked for at our next annual meeting, and I am sure shareholders will endorse the directors' opinion that we are fortunate in securing the co-operation and advice of a gentleman so long and

intimately connected with the gold mining industry. I now beg to move the adoption of the directors' report and the accounts.

Far East Rand Terms.

Mr. G. Imroth said:—I have little to add to the comprehensive statement on the affairs of the company which your chairman has submitted to you, but as I have on a former occasion referred to the terms of the lease between this company and the Government, I should like to take this opportunity again to mention that anomalies undoubtedly exist in the scale which have the effect of penalising efficiency, and are to the financial disadvantage of both the Government and the lessee. I have made representations to the Select Committee on these points, and we are now awaiting action to be taken by Parliament. I trust that both the committee and Parliament will see the justice of our representations. Of course, you will understand that in this matter I am dealing with a specific case, which has now been tested by some years of actual results. We have been very fortunate in having secured an area which, as you see from the results placed before you to-day, is a very valuable one, but our experience shows us that if the company had not been fortunate in leasing this particular area the results might have been far less favourable; in other words, leasing State areas under present conditions is very much of a gamble, and we do not think that the inducements offered, considering the speculative nature of the far East Rand, are sufficiently good to attract the necessary capital. You are aware that the Government is reported to be considering a change in the Gold Law affecting the leasing of other areas, and it is to be hoped that the changes will be of such a nature as to encourage the advent of capital.

Some Questions.

Mr. F. W. Baxter asked if the liability was likely to be much greater before the new mill started. It was stated to be £300,000 at the end of last year, according to the balance sheet.

The Chairman replied that there would be some further expenditure. Their programme as originally laid out was principally directed towards the equipment of the mine from a purely mining point of view. There would be small items to be added to what was in the account, and then, of course, there would be the housing of the employees to be taken more vigorously in hand than had been done before. But with the profits they were earning the liability would be very little increased over what it was at the end of the year.

Mr. Baxter asked if the amount paid out to the Government would interfere for some time with probable dividends, say in June next year.

The Chairman replied that the amount payable to Government would not interfere with the distribution of dividends when the finances were put on a basis where there would be cash available for dividends out of profits.

Mr. Lewin asked what was the definite proportion of the Government's share of profits. He thought it would be better if a clear statement could be issued with the reports, as people were under the impression that it was much greater than it really was, seeing that last year's amount was not more than £16,000.

The Chairman said the directors would take Mr. Lewin's suggestion into consideration. The Government's share of profits was adjusted on a sliding scale, according to the rate of profit to the total production. Mr. Imroth had pointed out that there was an anomaly. It was rather an intricate calculation, but if the Government acceded to the suggestions made by Mr. Imroth when he gave evidence before the Select Committee it would be simple.

The meeting adopted the reports and accounts. Mr. C. Marx, retiring director, was re-elected, and Mr. Ernst Danckwerts and Messrs. Douglas, Low and Co. were re-appointed auditors.

VAN RYN DEEP.

Profit of Over £500,000.

The 11th annual general meeting of shareholders of the Van Ryn Deep, Ltd., was held at 3.45 p.m. on May 26 in the Board-room, Consolidated Buildings, Mr. J. Munro presiding. There were also present: Messrs. G. Imroth, C. Marx, H. A. Rogers, J. H. Ryan, W. Dalrymple, P. Richardson, B. Southwell, A. G. Gill, T. R. Nicholson, C. G. Fitzpatrick, J. Andrew Cohen, M. Dold, H. W. Anderson, Fergus Fergusson, F. L. Marx, J. J. Hardwicke, L. Bourne, R. A. C. Kearns, E. J. Mathews, E. Lewin, W. T. Warriner, C. A. C. Treneer, F. Hillier, F. W. Baxter, L. White (consulting engineer) and Frank Hall (representing the secretaries).

The Chairman said: It is with great pleasure that I rise to submit to you for approval the report of your directors on the affairs of your company, as well as the accounts for the year ended 31st December, 1915, duly audited, and the usual reports of your consulting engineer and mine manager. From the directors' report you will gather that the claim area of your property has been increased by the purchase of 3,505.353 acres, the cost of which amounted to £3,353.17s. 8d. The acquisition of this ground brings the total of the reef-bearing area held by the company to 767,933.7 claims. The ore crushed during the period under review shows an increase of 25,620 tons over the tonnage treated during 1914, and the working profit exceeds that of 1914 by £113,066 3s. 2d. The total profit for the period under review, including £9,500 11s. 9d. received for rents, etc., amounted to £526,808 14s. 11d. The increase in the profit is mainly due to the improvement in the grade of the ore treated by about 4s. per ton as compared with the previous year. Certain necessary expenditure for improvements made underground, together with an increase in the cost of essential stores, was responsible for an increase in the working costs by about 6d. per ton. During the year two dividends of 15 per cent. and 17½ per cent. respectively were declared, the amount absorbed being £388,989 18s. and, after allowing for the expenditure under the Miners' Phthisis Act, Profits Tax, Special War Levy, Special Gold Charges and depreciation, an amount of £154,678 3s. 7d. was carried forward. I am glad to say that the balance of £2,413 6s. 6d. standing to the debit of "Advance Stoping Account" has, since the close of the financial year, been cleared off. You will notice from the consulting engineer's report that special attention has been and is being given to the ventilation of your property, which I am pleased to say is now excellent. Your directors, in view of the possible shortage of essential mine stores, deemed it advisable to make larger purchases than usual, hence an increase of the item "stores on hand" by £25,374 11s. 9d.

Development Work.

It was considered advisable to steepen both the east and west incline shafts, the former from 11 to 35 degrees and the latter from 14 to 30 degrees. Your consulting engineer advises us that this work will have the effect of considerably curtailing shaft-sinking, thereby reducing the amount of capital expenditure in the future; it will also enable the lower portion of the property to be developed in a cheap and efficient manner. Development exposed reef of highly satisfactory value in both the central and eastern sections of your property. The ore reserves were re-estimated at the end of the year, and it was calculated that the payable reserves amounted to 2,044,108 stopping tons of an average assay value of 8.4 dwts. over a stopping width of 62 inches. Since the close of the year under review the

east incline shaft has been completed, while the west incline is nearly so, and in general good progress has been made in the mine. The fathomage broken per month shows a substantial increase, which enables the management to do more sorting, with beneficial results on the yield. Certain improvements have been effected in the reduction plant, increasing the capacity thereof to about 46,000 tons for a normal month of 26 working days. During the year a direct acting steam hoist has been erected at the east vertical shaft, which will replace the two geared steam hoists there, which were not quite suitable as a permanent installation. You have no doubt read the last quarterly report and noted the excellent values of the reef development. I am glad to be able to tell you that since the end of March the development has continued equally good, if not better. At our last year's annual meeting I informed you that the reef in the area to the west of the west shaft is of low grade, and that development in this section of the property was on a small scale, our attention being principally concentrated on opening up the central and eastern sections of the property.

Bright Future.

The second level drive west from the west shaft has, however, been continued steadily throughout the year, and is now about 2,400 feet west of the shaft. The results obtained in the Apex Mine in ground contiguous to our western boundary encourage us to push on this drive, and we hope that we may soon get through the poor area and open up payable ground in the western end of our property. In the lower levels an encouraging result has been obtained in the 8th level west drive from the west shaft, where the reef has just been struck in the cross-cut from the shaft, averaging 50.25 dwt. over 31 inches of reef. Development in the central and eastern sections of the mine goes on apace, and in the 5th level east from the east shaft, which is the most easterly working point in the mine, the value for last month was 42.9 dwt. over 48 inches for a distance of 34 feet driven. Altogether the outlook as disclosed by recent development is excellent in every way. Increased profits have been earned in March and April of this year, and I am satisfied that further improvements in the profits and increased dividends can be looked forward to by shareholders. In September Mr. E. A. Douglas resigned as manager of the mine, and was succeeded by Mr. Chas. Marx, jun., who had relinquished his position as manager of another mine of the group to take up this appointment.

Men on Active Service.

I think it right, gentlemen, before I conclude that I should express our admiration of the men who have gone forward to German East Africa under General Smuts and to Europe to fight the Empire's battles. Although there is no doubt that the release of so large a number of mine employees is putting a severe strain on the industry, we have, wherever possible, given our consent cheerfully to every applicant desiring to do his bit. The number of your company's employees on active service is 51, and they or their dependents receive monthly allowances of £316. It may also be opportune for me here to mention that the Barnato Group of mines and the Consolidated Investment Co. have in all released for active service 299 men, and their monthly grant amounts to £2,131. You will, I am sure, join me in wishing them a victorious and safe return to their homes and their former spheres of activity. It is with much regret that I have to chronicle the death of three of our employees, two in action and one from disease, and of seven men wounded and three missing. To their relatives we extend our hearty sympathy.

We should also record our thanks to those men who, though anxious to enlist, were from force of circumstances obliged to retain their posts. Their duties entail a great deal of arduous work, which they carry out cheerfully and diligently. The thanks of shareholders are especially due to Mr. White, our consulting engineer, and his staff, to the head office staff, and to the managers and staffs of the mines of the group, who one and all carried out their duties with enthusiasm and efficiency, notwithstanding the dislocation occasioned by so many changes.

Excellent Position.

Mr. J. H. Ryan, in seconding, said: It must have been pleasing to the shareholders to listen to the remarks just made by you when moving the adoption of the reports and accounts submitted. The accounts before you reveal an excellently strong position, but this is merely a continuation of the splendid record of this company since it started milling in the middle of 1913. Each year it is your good fortune to report an increase in profits, until we have now the excellent result of £526,806 for the year 1915. The cash position is a very strong one, showing liquid assets in gold, cash, stores, etc., aggregating £503,604; against which, apart from the dividend declared in December, we only owe £113,279, so that we start this year with a handsome balance. In view of this position, the large ore reserves of 2,044,000 tons of 8.4 dwt., and the splendid values which we continue to develop monthly, one might have thought that the directors, in declaring only 17½ per cent. for December, were rather too conservative; but in times like these, with a great European War raging, it is as well to be on the safe side until peace reigns again, when it is quite evident to me that better dividends will be distributed.

The report and accounts were adopted. Messrs. G. Innoth and C. Marx, the retiring directors, were re-elected, and Messrs. Henry Hains and Alex. Aiken were reappointed auditors.

BRAKPAN MINES.

Mr. F. R. Lynch, chairman, presided at the annual meeting of the Brakpan Mines, Ltd., on May 26. There were present Messrs. F. R. Lynch, chairman, H. S. Johnson, Hall C. Marx, A. Strauss, J. J. Ronketti, E. Renaud, G. Sonn, W. S. Saunders, J. H. Gratton, F. A. Unger, W. T. Birch, A. Sprinz, representing 393,070 shares out of a total issue of 750,000.

The Chairman said:—Gentlemen.—The annual reports and accounts for the year ended 31st December last were issued in London and Johannesburg on March 25th, and shareholders have thus an opportunity of making themselves fully conversant with the details thereof.

During the year 725,163 tons of ore were treated, this being an increase of 103,595 tons over the previous year and a record tonnage in the history of the mine. The yield of the tonnage treated was equivalent to 27s. 11d. per ton, working costs averaged 18s. per ton, and the resultant profit was 9s. 11d. per ton. A comparison of the "per ton" figures with those of the previous year shows that the value of the yield was increased by 3d. per ton, and that working costs were reduced by 6d. per ton, these combined improvements resulting in an additional profit of 9d. per ton mined.

As a result of the year's operations the working expenditure and revenue account shows a profit of £585,396, to which must be added interest, dividends on shareholdings, and sundry revenue amounting to £4,123, making a total of £592,519. Certain extraordinary debits have to be deducted, such as additional war charges on gold realisation £11,375, war relief funds and donations £1220, and loss on realisation of Victoria Falls and Tugela Power Company's preference shares £902, which together amounted to £13,497. The profit earned has enabled the company,

after distributing two dividends of 17½ to 22½ per cent. respectively, and providing for the payment of the Government tax on profits and the special war levy, to carry forward a balance of £81,518 on appropriation account as compared with £80,512 at the end of 1914. Although these figures show an appreciable advance on the results obtained in the previous year, they do not reflect the true extent of the improvement, and for comparative purposes other considerations have to be borne in mind. During the year 1914 the war had little effect on the cost of mining materials, we had no additional war charges on gold realisation to provide for, there was no special war levy by the Union Government, and none of our employees were away on active service. It is possible that shareholders do not realise the effect on distributable profits of these additional charges.

Extra Expenditure.

When I inform you, however, that during the year 1915 the extra expenditure due to the war was equivalent to an additional 6 per cent. dividend on the capital of the company, you will appreciate the extent to which shareholders in gold mining companies are affected. Further, this does not allow for the abnormal conditions occasioned by a very considerable number of mine workers having been granted permission to join the forces of the Empire. Eighty-eight Brakpan Mines employees are at present on active service, and this number represents 20 per cent. of the total average number of Europeans employed on the property. These men will be reinstated upon their return, and regular monthly allowances are being paid to them or their dependents by the company, the amount in each case being determined by individual needs and circumstances. You will be interested to learn that the mine employees have up to date contributed a sum of £4,183 to the various war funds.

Facilities for Recruiting.

It has been stated on more than one occasion recently that the mining industry has refused to grant facilities for its employees to proceed on active service. The figures I have just given you are common to most of the mines on these fields, and in view of the present shortage of experienced men to take the places of those who wish to enlist, and the necessity of doing all that is possible to maintain the output of gold, it is impossible to allow any more men to leave without seriously affecting operations. Whilst we have every sympathy with the patriotic feelings of those employees who wish to answer the call of the Empire, these men must recognise that special responsibility rests with the industry to carry out the expressed wishes of the Imperial and Union Governments by providing the gold which will enable the war to be carried on to a successful issue. Our ability to keep the mines working at full pressure to-day is due chiefly to the undiminished vigilance of the British Navy and to the assistance afforded by our Governments in obtaining the necessary supplies. With regard to working costs, you will readily understand that owing to the congestion of work in factories of every description, the shortage of ships for ordinary trade, and other adverse circumstances, the prices of imported stores continue to advance, and it is impossible to say to what extent working costs may be affected. Following our usual practice working costs have been charged with all renewals as well as maintenance costs, it being the opinion of the board that the cost of our monthly profits approximate to the distributable profit the best chance there is of shareholders misreading the results.

Balance Sheet.

There are a few items in the balance sheet upon which it is necessary for me to comment. A further sum of £19,399, representing dividends due to enemy shareholders, has been paid to the

Custodian of Enemy Property in England, in respect of the dividends declared in December, 1914, and June, 1915. Pending the passing of a Trading with the Enemy Act by the Union Government, all sums accruing under this heading since the end of the year have been retained locally. The item "Rebates in Suspense" represents the sum set aside in consequence of the action brought against the company by the Victoria Falls and Transvaal Power Company in connection with our power agreement. We had hoped that the case would have been settled before this, but various obstacles to the hearing of the action presented themselves, and it is now expected that it will be heard towards the end of this year. The fixed development charge of 2s. 6d. per ton milled more than covered the actual expenditure, and a credit of £10,814 was accumulated on this account. The actual cost of development, including equipment, was equivalent to 1s. 4d. per payable mill ton developed, as compared with 2s. per ton in 1914. The credit balance on this account is being carried forward in suspense, but since the beginning of this year the fixed charge has been reduced to 2s. 3d. per ton milled. Owing to the exigencies of the war and as an insurance against shortage, the stores and material on hand in excess of standard stock are now represented by £31,865, so that the total value of mining supplies held by the company at the end of the year stood in the books at £58,865. It may be necessary to even further increase our stock of stores, but that will only be done if, in the opinion of your directors, such a course is advisable.

During 1915 the amount disbursed under the head of capital expenditure was £5,215, which represents the cost of additions to plant and the purchase of shares and interests in other concerns. As against this, certain credits have been received by the sale of the 40 additional stamps to Springs Mines, and the realisation of the balance of our holding in the Victoria Falls and Transvaal Power Company's preference shares. The proceeds of these sales amounted to £8,299, which was credited to unexpended capital account so that after making provision for the amount expended during the year the account shows an increased credit of £3,084, making a total sum of £11,508 carried forward as a reserve to meet future capital expenditure.

Development.

The technical reports contain full details of the work of the year, and the special significance to be attached thereto. Whilst the development footage amounted to 23,179 feet, which is some 1,200 feet less than that accomplished in 1914, the tonnage and assay value of the ore developed were considerably better, being an improvement on any results obtained since the inception of the company. The payable footage totalled 8,540 feet representing 49 per cent. of the total footage on reef, the value being 22.7 dwts. over 32.1 inches. These results are most satisfactory, and you will, I am sure, be gratified to know that they are continuing. In the quarterly report, issued in April last, it was stated that of 3,570 feet on reef, 1,735 feet or practically 49 per cent. were in payable areas, the average value being 21.93 dwts. over 33.90 inches. This excellent development is naturally reflected in the ore reserve. At the end of the year the reserve of the ore reserve showed an amount of 3,617,000 tons, having a value of 7.56 dwts. per ton over 62 inches. The increase in the tonnage in reserve, notwithstanding the record tonnage crushed during the year, was 527,000 tons, the value of the whole showing an improvement of 1.13 dwts. For 1915 your consulting engineer estimated the average yield of the mine as between 26s. and 28s. per ton, the average recovery being actually 27s. 11d. per ton. This year the estimate has been increased to between 28s. and 32s. per ton, but, as pointed out in the report the increase in the ac-

tual yield will be gradual. Some headway in this direction has already been made. As to the general results for the year, shareholders have every reason for satisfaction. The improvement in the monthly profit, resulting in increased dividends, the additional tonnage milled and the reduction of working costs in the face of increased prices of stores are all matters for congratulation, but the outstanding feature of the year is the very gratifying improvement in the additional value of the ore reserve.

Next Month's Dividend.

With regard to the future, whilst recognising that it is never safe to prophesy when dealing with mining ventures, from present indications I see no reason why the results for the current year should not prove even more profitable than those of 1915. The benefit of last year's good development should be gradually reflected in the monthly profits, and thereafter we may look forward to an increase in the dividend returns. At present it is impossible to give you any definite information as to the dividend to be declared next month, but the profits so far earned are such that I have every reason to believe the distribution will be satisfactory.

Shortly after the last annual general meeting of the company Mr. W. L. Houlden resigned his seat on the board. Mr. W. S. Saunders was elected to fill the vacancy, and his appointment will come before you to-day for confirmation.

In concluding my remarks I wish to express our appreciation of the able services rendered by Mr. C. E. Knecht, the consulting engineer; Mr. J. F. Cook, the consulting mechanical engineer; and Mr. C. R. Davis, the general manager at the mine. I also wish to acknowledge the services rendered by the members of the mine and head office staffs. I now beg to move the adoption of the reports and accounts for the year 1915 as submitted.

Mr. Birch said he thought the shareholders in South Africa and overseas would be very gratified to receive the report of the chairman's speech, and their thanks were due to the board and the management for the way the company had been run during the past year. He had pleasure in seconding the adoption of the reports and accounts.

The motion was carried.

The retiring directors Messrs. A. S. Pearce and W. S. Saunders, were re-elected, and the auditors were reappointed.

NEW ERA CONSOLIDATED.

At a meeting of shareholders in the New Era Consolidated, Ltd., held on May 26, the chairman (Mr. F. R. Lynch) said:—The annual report and accounts, which were circulated to shareholders on March 25 last, disclose the result of your company's operations for 1915. The year through which we have passed was one of considerable anxiety to the directors of South African finance companies. South Africa has possibly felt the strain occasioned by the war to a less extent than any other part of the British Empire, and whilst local financial conditions may have been favourable enough to have warranted a bold policy being pursued, yet the fluctuations in the state of the war, combined with political unrest in South Africa, caused a general feeling of apprehension to exist, which resulted in a more cautious policy being pursued than on the surface may have appeared justified. It has been the aim of your directors during this period to further revise the company's shareholdings and at the same time to keep a reasonably large sum of cash free, so that any promising business that might be introduced could be taken advantage of. Through the consideration extended to us by the Consolidated Mines Selection Company, Limited, we have had an opportunity of acquiring participations in the following new ventures:—(1) On the reconstruction of the Robinson Deep Gold Mining Company, Limited, we were offered, and accepted, a participation of £5,000 in the agreement to lend to the Robinson Deep, Limited, as and when required, £300,000 at 6½ per cent. interest, and as consideration therefor secured an option to take up

at par 1,666 Robinson Deep, Limited, "B" shares, the period of the option being seven years. (2) In the agreement to guarantee the Springs Mines loan of £315,000 we acquired a 10 per cent. interest, the contingent liability of your company in respect of which amounted to £31,500. As consideration for the guarantee we received a cash commission amounting to £1,260, an option to take up at par 5,500 shares, and a further option at par on 10 per cent. of all options not taken up at May 2 last by the original allottees of Springs Mines debentures. As the options issued to the original allottees have all been exercised, and under the terms of the guarantee the cash accruing therefrom has been utilised in reduction of the loan, this contingent liability is now liquidated. The commission received was placed to the credit of interest and commission account, and the amount derived from the sale of the options was set off against the loss incurred by the realisation during the year of certain of our shareholdings. The list of the company's shareholdings, which is given in the directors' report will have made more conversant with the changes which were effected during the year. The book value of shares held at December 31, 1915, was £80,747, but the market valuation at the same date was £148,580. To-day the position shows further improvement. Certain changes have been made since the end of the year in the shareholdings, details of which I shall give you later, and the value of your investments now appears in the books at £87,923, whilst the present market valuation is £182,500. This, I think you will agree, is a very satisfactory showing. As a result of the year's operations we have been able not only to pay the usual 10 per cent. dividend, but also to increase the unappropriated balance by nearly £2,000. The income from dividends on shareholdings amounted to £16,704, and we received by way of interest and commission £1,520, making a total of £18,224, which represents an increase of approximately £4,000 over the previous year. On the other side of the account the debits amounted to £6,250, an increase of £600 which is more than accounted for by the net loss of £1,120 on shares realised.

East Rand Claims.

At the last annual meeting a shareholder asked whether the claims held on the East Rand were worth retaining. The directors have again given this matter their careful consideration, and towards the end of the year, on the advice of your consulting engineer, it was decided to abandon all our property holdings with the exception of mine No. 462, on Klippoortje, equal to 23 claims, and 22 claims on Langlaagte No. 13, or a total holding of 45 claims. It was felt that as public attention is now centred in the far East Rand there was little chance for years to come of dealing with the deep-level mining claims which have been abandoned, and that it was advisable to relinquish them at once rather than to continue paying licences in the apparently remote hope of being able to turn them to account in the distant future. The value of these claims having been written down to a purely nominal figure some years ago there was no need for an adjustment of the property account, which has remained at the same sum since 1902. In the opinion of your directors the amount standing against proper account to-day is more than represented by the present value of the claims retained. Since the end of the year 400 shares in the Witwatersrand Gold Mining Company have been sold, and the following purchases made:—1,000 Modder B shares, £2,000 Springs Mines debentures, and £9,000 four and a half per cent. British Treasury Bonds. In addition, we have acquired a 1½ per cent. interest in the provision of working capital for Dagabautein Mines, Limited. Under this interest we have already taken up at par 1,500 shares, and shall subscribe for a further 3,000 shares at the same price within two years. The consideration received in respect of this business was the following options: On 1,738 shares at par for three years, on 1,875 shares at 22s. 6d. for four years, and on 1,875 shares at 25s. for five years. The annual meet-

ings of the Transvaal Coal Trust Company, Brakpan Mines and Springs Mines, in which companies you hold a large number of shares, were held this morning, and their annual reports and accounts are laid on the table for your information. In regard to the future, although it is perhaps unwise to attempt to look far ahead in these abnormal times, I think I may say, without being unduly optimistic, that the immediate future is bright, and that we may reasonably anticipate a successful year. The mines situated in the popular far East Rand district are well represented in the list of shares now held by us, which altogether comprise an excellent selection, and one which it would be difficult to improve upon, whilst the available cash in hand, amounting to £12,250, together with easily realisable securities, will enable us to accept participations in any attractive new ventures. All things considered, therefore, I feel that we may look forward with confidence to unrestricted activity in the Witwatersrand mining industry generally, and to the further strengthening of the financial position of your company. Certain alterations have taken place in the personnel of the directorate during the year. Mr. W. L. Honold resigned from the board after the last annual meeting, and Mr. Clewitt Davies on his departure for London. Shareholders will be glad to know that Mr. Davies, who has been connected with the company for many years, has accepted a seat on the London committee. You will be asked to confirm the appointment of Mr. A. S. Pearce and Mr. R. des Clayes as directors to fill the vacant seats on the board. I now beg to move the adoption of the reports and accounts for the year ended the 31st December, 1915.

The reports and accounts were adopted.

SPRINGS MINES.

The seventh ordinary general meeting of shareholders in the Springs Mines, Ltd., was held on April 26, in the board-room, Corner House. There were present Messrs. F. R. Lynch, chairman, C. Marx, G. C. Fitzpatrick, J. E. Jones, R. S. Kearns, H. S. Johnson-Hall, G. Sonn, W. H. B. Frank, D. C. Greig, A. S. Pearce, W. S. Sanders, V. J. Ronketti, W. I. Haley, R. S. Mennie, G. Rennie, W. Gordon, J. R. Nicholson, W. P. Burch, J. Phillips, J. H. Mackie, M. F. Brorson, F. W. Baxter, M. Mendelssohn, S. Edkins, J. Walker, J. F. Perry, A. C. Meiklejohn, John H. Richardson, D. W. Matthews, G. Beves and G. Parkes, representing 341,217 shares out of the total issue of 795,000.

Chairman's Speech.

The Chairman said:—Gentlemen.—In the history of a gold mine there are certain periods which stand out prominently above all others, and it seems to me that the middle months of the first half of the year 1915 was the critical period in the financial history of Springs Mines. War was raging in Europe and other parts of the world, our available finances were nearing exhaustion, and a deposit of £30,000 with the Bank for Handel und Industrie which would in the ordinary course have been available was, under the prevailing circumstances, not forthcoming. Your directors were therefore, faced with the problem of finding some means of raising additional funds or else of necessarily suspending operations. It was at this time and in these circumstances that our friends the Consolidated Mines Selection Company and the Transvaal Coal Trust Company came to our assistance by providing cash to the extent of £30,000 in order that work could be carried on whilst negotiations were proceeding for the further financing of the company. Again the Consolidated Mines Selection Company and the Transvaal Coal Trust Company came to our relief, and on their guarantee we were placed in a position to borrow up to £315,000, as and when re-

quired, on most favourable terms—terms, indeed, which even under normal conditions would have been considered satisfactory. With the money thus provided we shall be able to carry on development as well as provide the necessary equipment to bring the mine to the producing stage. It would have been particularly unfortunate if we had had to suspend operations at that time as the mine was in a most interesting stage, and already giving promise of the excellent results which were to follow. To provide a loan of £315,000 in such an abnormal time as then existed was no light task, and it was entirely as the result of the enterprise of the guarantors that it became possible for us to continue work. The guarantors are, I am sure, pleased that the faith then evinced in the property has been justified, and shareholders have every reason to be grateful to them for the assistance so timely rendered. In the annual reports and accounts now before you the position of the company as at the 31st of December last is clearly reflected. The reports of your consulting engineer and mine manager contain full particulars of the work carried out at the mine to the end of the year and the results obtained therefrom, and beyond referring to one or two matters of outstanding importance it is unnecessary for me to again cover the ground.

Development Policy.

At the last annual general meeting the chairman pointed out that owing to a shortage of funds, work was confined mainly to the most promising localities and in view thereof the showing then could not be regarded as truly representative of the value of the mine as a whole. Immediately the additional funds were provided it was decided to reopen the north shaft section and the enforced policy of developing only in the south shaft section, which was then and still is the most promising area, was abandoned. The total footage accomplished during the year amounted to 13,786 feet, of which 10,670 feet were sampled, 52 per cent. of which disclosed payable values averaging 27.8 dwts. over 23.7 inches, whilst the total footage since the commencement of development amounted at the end of the year to 32,947 feet, of which 21,730 feet were sampled, 53 per cent. of which was payable, of an average assay value of 25 dwts. over 25.3 inches. The result of this work is reflected in the ore reserve. Whilst the payable ore more or less blocked out at the end of 1914 amounted to 553,000 tons, of an average value of 10.3 dwts. over 52 inches, the ore indicated by development at the end of 1915 was estimated at 1,125,000 tons, of an average value of 10.4 dwts. over an estimated stopping width of 57 inches, or an increase for the year of 572,000 tons of a slightly higher value over an estimated stopping width increased by 5 inches. Since the end of the year a further estimate of the ore reserve has been made, and in case any shareholder may not have seen the quarterly report issued in April last I may mention that the estimated ore reserve at the end of March was calculated at 1,314,000 tons, of an average value of 10.2 dwts. over the same estimated stopping width, the percentage of payability being 49.5 per cent. of the total ore developed. The results obtained since that date show little variation, and it is expected that when the reserves are again calculated at the end of June next we shall have every reason to be satisfied with the results disclosed.

Share Options Exercised.

During the period under review the issued capital of the company was increased to £630,145, the increase being necessitated through certain holders of option certificates exercising their right to take up shares at par. As you are aware, the option expired on May 2 last, and up to that date a further 308,600 shares were taken up by the holders thereof, whilst the guarantors have since exercised their

option on the balance of the shares not taken up by option holders, amounting to 6,255, so that the issued capital of the company now stands at £945,000. The registered capital has since been increased to £1,000,000, in order to meet the options already exercised and those still outstanding. You will remember that the guarantors were granted options at par on 55,000 shares, and on all shares which were not taken up under the then existing options granted to the original allottees of debentures. As these latter options have now been exercised, there remain 55,000 reserve shares, which are under option to the guarantors of the loan until July 31, 1918, or two years after the declaration of peace, whichever may be the later date. From the inception of your company to December 31 last we have received a total sum of £1,028,956. The working capital shares, which were issued at 30s. per share, provided £495,000, the debenture issue £307,076, various loans £150,605, and interest, sundry revenue, and options £276,275. Of this we had expended at the end of the year £980,731, which left a balance of cash and cash assets, after deducting sundry creditors, of £48,225. Since the end of the year the position of your company has altered considerably. The financial position, after the exercising of the options already mentioned, was as follows:—Cash and cash assets, £124,665; less sundry liabilities, £61,553; leaving a balance of available cash and cash assets of £63,112.

Sufficient Funds.

The date of commencement of production has naturally a very considerable effect on the finances of your company, and the funds at present available will not be quite sufficient to meet requirements. But there is no need to feel the slightest concern or apprehension on these grounds, as the company is now in such an eminently satisfactory position that there will be no difficulty whatever in this connection.

Two items in the balance sheet call for special mention. You have probably noticed that the account "expenditure on development to date, £94,528 0s. 4d.," has been considerably reduced since last year. This is accounted for by the expenditure on permanent haulage ways having been transferred to "expenditure on shaft sinking, permanent haulage ways, and equipment to date." The haulage ways in Springs Mines are part of the main equipment of the mine, and are regarded in the same light as the shaft and the main incline. It was decided, therefore, to charge the cost of these haulage ways to the present account, instead of to development. The small increase in property account is due to expenditure in connection with the exchange of ground necessitated by our acquisition of the railway area. The farm Rustfontein No. 14, on which your mine is situated, was proclaimed a public digging in February last. The minepacht as originally plotted was cut in two by the railway, but an agreement was come to with the Government, whereby they granted your company the right to mine under the railway reserve, in exchange for a similar area to be deducted from the southern boundary of the original minepacht area. Your mining property, therefore, has been consolidated, and now comprises a compact area of 1,532.32 claims, of which 20.65 claims represent the railway area and 171.60 claims the discoverer's rights.

Commencement of Crushing.

We have recently received several inquiries from shareholders as to the date when crushing may commence. I have already dealt with this question in its relation to the financial position of the company, but it may perhaps be advisable to further comment on the subject. You will have noticed from Mr. Knecht's report that the reduction plant is being assembled at the south shaft, and that the mill will consist of 60 stamps, and have a nominal crushing capacity of 30,000 tons per month. The position at date is that most of the plant is already on the property, and the greater part of it is actually erected. Certain other essential parts are now on the water, and the few remaining items are nearing completion by the makers. Everything possible is being done to expedite delivery of the machinery which has not yet come to hand, and unless unexpected

delays occur we should reach the crushing stage some time during the latter half of this year. Before leaving this subject I should like to express our gratitude to the High Commissioner for South Africa in London, and also to the Munitions Department of the Imperial Government, for the facilities given, and the consideration shown in connection with the manufacture and shipping of the plant ordered. Had it not been for the kindly interest thus displayed on our behalf the commencement of production would have been very much further away than it now is. I feel, gentlemen, that you have every reason to be satisfied with the future prospects of your mine. The values so far obtained are excellent. The mine is being opened up with a view to the most economical working, and the date of commencement of production is in the near future. Provided that development continues on the present satisfactory lines, and values do not show much variation, I know of nothing to prevent your receiving at no far distant date handsome dividends as the reward of your patience.

Employes and the War.

It is due to the employes of the company that I should acquaint you with their endeavours in connection with the war. Out of an average number of European employes of 145, 16 have proceeded on active service, and many others would have gone if the management had found it possible to grant them the necessary permission. In a developing mine every man employed is essential, and it is only where a "fit" man can be replaced by one "unfit for military service" that this permission can be granted. A number of men whose services were indispensable were disappointed at not being permitted to volunteer, but in view of the necessity of increasing the supply of "golden bullets" our desire to meet the wishes of those employes could not be gratified. I feel that it is a matter for great praise that the men remaining on the property have up to date subscribed £1,490 to the various war funds. Certain changes have taken place since the last annual meeting of shareholders in the directorate, Mr. W. L. Honnold and Mr. William Dalrymple having resigned their seats during the year. We regretted having to accept these resignations, and I am sure you will join me in an expression of appreciation of the valuable services these gentlemen have rendered to the company. You will be asked to confirm the appointments of Mr. H. S. Johnson Hall and Mr. S. B. Joel as directors of the company. Before closing my remarks I desire, on behalf of the board, to express our recognition of the valuable services rendered by Mr. C. E. Knecht, our consulting engineer; Mr. J. F. Cook, consulting mechanical engineer; Mr. B. D. Bushell, manager at the mine; and also the head office and mine staffs. I now beg to move the adoption of the reports and accounts for the year 1915, as submitted.

Interest in the Company.

Mr. Haley, in seconding, said he had been at a good many company meetings of shareholders in his time, but he had never seen such a large number of shareholders present, which showed the great interest that was taken in the Springs Mines. Some little time ago he had made a calculation—1,314,000 payable tons, estimated working costs 20s., shares at 50s., and profits at 22s. 6d. per ton, will give 50 per cent. of profit at least in sight. A recent issue of one of the mining journals stated that a mine that had 100 per cent. of profit in sight was almost as good as the Bank of England. Well, they were approaching that with regard to security. There was no doubt that the Springs Mines was a very promising proposition. Mr. G. C. Fitzpatrick, in supporting the motion, said the chairman and the board were entitled to great credit for the financial arrangements that had been made. Another point he wished to congratulate them on was the excellent reports which were published. The annual report was a delightfully clear document. It gave the value of every level, rise, and vein, and the quarterly reports also gave the fullest information. It was the only company that gave such full information and set an example to companies on these fields.

The motion was then put and carried. Messrs. H. S. Johnson Hall and H. Newhouse were re-elected directors; the auditors were reappointed and their remuneration for the past audit was fixed at 75 guineas each.

On the motion of Mr. Jones a vote of thanks was passed to the chairman.

TRANSVAAL COAL TRUST.

At the annual meeting of the Transvaal Coal Trust Co., Ltd., on May 26, Mr. F. R. Lynch (chairman) presided, and there were present: Sir George Albu, Messrs. G. Sonn, A. French, R. S. Kearns, W. Baxter, H. S. Johnson Hall, A. S. Pearce, W. S. Saunders, J. H. Gratton, C. Marx, W. T. Birch, W. T. Warriner, E. W. Matthews, M. F. Broison and J. H. Mackie, representing 107,505 shares.

The Chairman said: Gentlemen,—The reports and accounts for 1915, which have been in your hands for some time, contain full particulars of the year's operations. In briefly reviewing the affairs of the company for the period covered by the reports, I propose to deal first with your coal interests, which have become rather overshadowed and of diminished importance in comparison with your other extensive and more remunerative interests. In the early months of 1915 it was generally felt that, owing to the war and the restrictions occasioned thereby, no expansion of the coal trade could be expected. An ever-increasing shortage of railway trucks, due partly to the requirements of the authorities for military purposes, and partly to the necessity of providing transport in German South-West Africa, combined with a decrease in the number of ships calling at South African ports, gave little promise of improving business; but a review of the year's trade of the Transvaal Coal Owners' Association shows that despite these difficulties, and although the demand for coal was spasmodic, some 70,000 tons were sold in excess of the tonnage disposed of during 1914. Unfortunately, we were not able to participate in this additional trade. On account of the difficulties mentioned in the reports of your consulting engineer and mine manager, the output of saleable coal from Oogies Colliery amounted to only 456,659 tons, a decrease of some 39,000 tons as compared with the output for the previous year. The principal reasons for the reduced output were the narrow width of marketable coal in certain sections of the colliery, occasional local disturbances due to the intrusion of sandstone bands, and the shortage of railway trucks. In order to overcome the mining difficulties, and to enable us to meet the calls made upon us, it was decided to sink an incline shaft on another portion of the property. This shaft has passed through the coal seams, which are now being opened up. The coal so far exposed is of fair width and good value, and will, we trust, at no distant date enable us to command our proper proportion of the trade. It is only natural that the adverse influences mentioned should be reflected in the coal account, and the profit from coal mining, unfortunately, again shows a reduction, having dropped to £15,806, as compared with £25,018 for the previous year. The difficulties at the mine were primarily responsible for this serious decline. The restriction in the output not only prevented us from participating in the urgent demands for additional supplies which arose from time to time, but in the early months of the year we were once again penalised, under our agreement with the Transvaal Coal Owners' Association, for not fulfilling orders received. Other factors which influenced the reduction of profit were the general increase in the cost of stores, due to the war, the allowances made to employes on active service, and the increased mine costs which are the invariable result of a

decline in output. Generally speaking, the year has been an unsatisfactory one as regards our coal business, and unfortunately we still have several of the difficulties to contend with. It is hoped, however, that when we are in a position to commence producing coal through the new shaft a better showing will be made.

The Accounts.

Turning now to the consideration of the accounts, you will have seen that dividends on shareholdings, representing the income from our Brakpan Mines shares, amounted to £101,400, which is an improvement of £25,350 on the previous year. The revenue from Brakpan Township was again satisfactory, and amounted to £5,664, an increase of £1,116 as compared with the year 1914. Some 18 business and 72 residential stands were disposed of at a total selling price of £9,340, most of the sales being on the instalment system of payment. The unpaid instalments and accrued interest on stands sold since the formation of the township amounted, at the end of the year, to £11,482. I may mention that the results from the beginning of this year to the end of last month far exceed those of any other similar period, as eight business and 107 residential stands were sold during the four months for a total selling price of £7,322. The only other items in the profit and loss account which call for special mention are the increase in the amount standing to the credit of interest, commission and sundry revenue, and the charge for war donations and subscriptions. Interest and commission account shows an increase of £1,203 as a result of the commission received in connection with our participation in the guarantee of the Springs Mines Loan, to which I shall refer later. The amount standing to the debit of war donations and subscriptions represents contributions to the various funds formed for the purpose of supplying comforts to men on active service, and also the cost price of gifts of coal to the Union Government in connection with the German South-West Africa campaign and to the Imperial Government. It was the feeling of the board that a contribution of such a necessity as coal would be more acceptable than a cash donation. The offers of supplies of coal were accepted by the Imperial and Union Governments, and I am sure you will approve of the action of your directors in this matter. In each case the gift was made jointly by certain members of the Transvaal Coal Owners' Association, the quantities given being 10,000 tons to the Union Government and 100,000 tons to the Imperial Government, of which this company's participations were 1,099 and 15,516 tons respectively. The total amount of the grant to the Imperial Government was not drawn during 1915, and the balance will no doubt be exhausted during this year. Several members of the mine staff, representing 8 per cent. of the Europeans employed, have been granted permission to proceed on active service, and in every case either half or quarter pay has been granted, according to the circumstances of the individual. The appropriation account shows a balance from profit and loss of £121,899, which compares favourably with £101,510 for the year 1914. Taxes levied by the Union Government amounted to £2,408, of which £552 falls under the Mining Taxation Act of 1910 and the balance of £1,856 under the Income Tax Act of 1915. This represents an increased tax on profits of £1,032 over the previous year.

Record Dividends.

The two interim dividends declared, viz., 8½ per cent. in June and 12½ per cent. in December, making a total for the year of 21½ per cent., absorbed £115,974, which constitutes a record in the history

of the company. In addition, the unappropriated balance has been increased from £48,305 to £51,822. There are a few points in the balance-sheet to which I would like to refer. You may have noticed that the old heading, "De Rietfontein Colliery," has disappeared. This colliery was closed down a few years ago, and as in the intervening period the greater part of the surface equipment has been disposed of, it was decided to close the account and transfer the balance to a new account, styled "Estate Buildings and Improvements." This account has also been debited with certain fencing and tree-planting charges. A portion of the surface rights of the farm Oogiesfontein, in extent two morgen, has been sold to the Government at a nominal charge for the purpose of establishing a police station. The item "Springs Mines, Ltd., Loan at Call, £15,000" represents our half-share of the joint loan of £30,000 by the Consolidated Mines Selection Co., Ltd., and this company, to which reference was made at the last annual general meeting. Dividends due to enemy shareholders, amounting to £22,709, were paid to the Custodian of Enemy Property in England, but the amount accruing under this head in respect of the dividend declared in December last has been retained in South Africa pending the passing of an Enemy Trading Act by the Union Parliament.

Granting of Loans.

At the last annual general meeting the chairman informed you of negotiations then in progress with the object of guaranteeing, jointly with the Consolidated Mines Selection Co., Ltd., a loan up to £315,000 to Springs Mines, Ltd. Whilst these negotiations were proceeding, it was ascertained that there was some doubt as to whether the powers of your company were sufficiently wide to enable us to undertake the business. Consequently it was decided to so amend the "objects" as to leave no possible doubt on the matter, and special general meetings of the company were held in June and July last, at which the necessary amendments of the memorandum of association were agreed to by shareholders, the resolutions being subsequently confirmed by an order of Court. Your company originally guaranteed 50 per cent. of this loan, but was immediately able to lay off half its obligation, and retained only 25 per cent. In consideration of the guarantee we received a cash commission of 5 per cent, amounting on our proportion to £3,937 10s. 1d., an option at par on 13,750 shares, and a further option at par on 25 per cent. of all options not taken up under the option certificates granted to the original allottees of debentures, which expired on the 2nd May last. You will be pleased to know that these option certificates have been so freely exercised that the obligation imposed upon us by the guarantee is entirely liquidated. In January last a satisfactory offer was made to your board to purchase the options which accrued under the guarantee, and, in view of our large holding in shares, it was decided to accept it. Your directors were influenced in this transaction by the offer of a participation in the new Daggafontein Mines scheme, more especially as this participation could thus be obtained without encroaching on the company's cash reserve. The profit earned by the sale of the Springs Mines options was sufficient to provide the amount necessary to take up 15,000 Daggafontein Mines shares at par and to acquire the following options granted by that company in connection with the provision of further working capital: On 5,794 shares at par for three years, 6,250 shares at 22s. 6d. for four years, and 6,250 shares at 25s. for five years. This, I think, completes my review of last year's operations, but certain important events connected with the company have taken place since the end of

the year with which I wish to make you acquainted. The farm Rietfontein No. 14, the gold-mining rights of which were sold to Springs Mines, Ltd., has been duly proclaimed, and owners' reservations, in extent approximately 4,375 acres, were granted to your company, of which, however, the Government has reserved the right to occupy 1,269 acres at some future date. We are now negotiating with the Provincial Administration for permission to establish a new township on the surface of a portion of the Springs Mines Mynpacht. The proposed township, the northern boundary of which adjoins the existing township of Springs, will consist of approximately 1,140 stands, some of which, as in the case of Brakpan Township, will be reserved for business purposes, while the remainder will be offered as residential stands. In connection with our application to the Townships Board, I should like to express appreciation of the very fair manner in which we were met by the Mayor and Municipal Council of Springs, who assisted us in every possible way. A few months ago we received from the Consolidated Mines Selection Co., Ltd., an offer to take up the 4,240 reserve shares in your company at 57s. 6d. per share, which price was slightly higher than the market price then ruling. Your directors accepted this offer, and the issued capital of the company has now been increased to £350,000. Your holdings of 253,500 shares in Brakpan Mines and 250,000 shares in Springs Mines remain intact. The annual meetings of these companies were held this morning, and I would refer you to the statements made from the chair. A copy of the speeches will, as in the past, be forwarded to each shareholder of this company. I should like to remark that, as far as the Brakpan Mines is concerned, the results so far obtained fully justify the opinions expressed by your former chairman. To-day the prospects of the mine are excellent, and the dividends accruing on our large holding will be duly reflected in the distributions of this company. As regards Springs Mines, while the crushing stage has not as yet been reached, the ore reserve at the 31st March last speaks for itself. At that date 1,314,000 tons had been developed, which gave an assay value of 10.2 dwt. over 57 inches, and, seeing that there has been but little variation in the results obtained since that date, you have every reason to look forward with confidence to a considerable improvement in your dividend returns when Springs Mines reaches the dividend-paying stage. You will be asked to confirm the appointment to a seat on the board of Mr. W. S. Saunders in the place of Mr. W. L. Honnold, who resigned during the year. In conclusion, I should like to express our appreciation of the able services rendered by our consulting engineer, Mr. Knecht; by the colliery manager, Mr. Williams; by our business manager, Mr. Morris; and also by the head office and mine staffs. I do not think there are any other points that it is necessary for me to touch upon, but if there are any questions I shall be pleased to answer them. I now beg to move that the reports and accounts for the year 1915, as submitted, be adopted.

Mr. Sonn seconded the motion, and it was carried.

The retiring directors, Messrs. W. S. Saunders and F. R. Lynch, were re-elected, and the auditors were reappointed.

MEYER AND CHARLTON.

Sir George Albu presided at the annual meeting of shareholders of the Meyer and Charlton Gold Mining Company, Limited, held at the Gen-

eral Mining Buildings on May 29. Others present were Messrs. W. T. Birch, W. J. Corder, A. Sprinzh, H. W. Dalton, and the secretary, Mr. J. V. Blinkhorn.

The Chairman, in moving the adoption of the annual report, said:—This gathering to-day reminds me that it has been my duty and pleasure to preside at the annual meetings of your company for a period of 25 years. When I first became officially associated with this company as managing director in 1889, the mine was a small concern of nine claims in area, and since then I have witnessed and assisted at its gradual growth by the purchase from time to time of additional areas. In 1909 it really looked as if the company's honourable career was rapidly drawing to a close, but the negotiations which we were then able to carry to a successful issue for the acquisition of the Lark Syndicate ground and the Government's undermining rights of the bewaarplaatsen, etc., fortunately gave a new lease of life to the mine, which has since proved more prosperous than ever. It is a matter of interest and gratification to realise that since the first dividend was declared in 1888, except for the year 1890, and the period of the Anglo-Boer war, distributions have been made to shareholders without intermission, which will have amounted before the end of August next to over 1½ millions sterling, equivalent to more than 1,400 per cent. on the capital issued, and further that the mine has still a comparatively long life to run. Gentlemen, 27 years is a large slice out of the life of either a mine or a human being. In my case I was a young man when I first became connected with the Charlton: I shall be an old one (if still in the land of the living) when his career is finished.

Profit of £238,530

Leaving these reminiscences, and dealing with the accounts for the past year, I am glad to be again able to point to a decidedly prosperous state of affairs. The working profit for the period amounted to £238,530. The recovery value of the ore milled for 1915 (after deducting the estimated additional charges for freight and insurance, etc., on gold un-realised) comes out at 45s. 2d. per ton, as compared with a corresponding figure of 47s. for the previous year. This decreased yield is due in a large measure to the policy decided on by your Board of keeping the recovery value at round about 45s. per ton, which we consider a fair average value for the mine after including what we estimate to be a full proportion of the lower grade ore bodies (south reef and main reef) with the richer main reef leader. Dealing with the other side of the account, working costs show an increase of about 7½d. per ton, and in this connection I think it desirable to point out that working expenditure was adversely affected by additional measures taken underground with the view of safeguarding the workings by means of extra timbering and rockwalling, and also by the considerably enhanced cost of stores and material experienced by reason of the abnormal conditions existing in consequence of the war. You will readily understand that with such an exceptionally rich reef as characterises your mine, in the shape of the Main Reef leader, we must take no risk of rock movements which might have the effect of causing caving in of stopes, and so either cutting out altogether supplies of this valuable ore body, or, on the other hand, rendering the eventual mining of it a difficult and costly process. The gross profit

for the year amounted to £251,262, which, with the balance of £189,316 brought forward from the previous year, gave us a total gross profit of £440,938 to deal with. As I have on previous occasions pointed out, the Union Government takes a heavy toll of our earnings, and its total share for 1915 (profits as a percentage of net profits payable in respect of the undermining rights of the bewaarplaatsen, etc., and war levy), amounted to £55,071. Other special charges on account of capital expenditure, miners' phthisis compensation, and income tax, absorbed £3,389. There then remained an available balance of net profit of £382,478, of which £260,000 has been distributed to shareholders in the form of two dividends of 8s. per share each, and a bonus of 10s. per share, leaving an unappropriated balance of £122,478, which has been carried forward to the new year. A simple analysis of the appropriation account shows that the actual net profit for the year was £193,162, and it follows, therefore, that the difference between that amount and the £260,000 paid out to shareholders for the same period really represents a distribution of a portion of the profits accumulated in previous years.

War Taxation.

With reference to the balance sheet as at December 31 last, the only item on the debit side calling for attention is the provision for the war levy. It will be noticed that we have only charged one-half of this company's estimated proportion of the levy to the 1915 accounts, and that the remaining moiety is to be charged against the current year's profits. We adopted this course in consequence of an assurance last year from the then Minister of Finance that the impost was not to be regarded as of a recurring nature, and that therefore it might equitably be apportioned out over two years. Subsequent to the preparation of the balance sheet, however, it was announced in the session of the Union Parliament now sitting that the Treasury intended to make a further levy of £500,000 on the gold mining industry for the fiscal year 1916-17. Consequently your company's accounts for 1916 will be subject to a charge of at least twice the amount debited in this connection in the profit and loss account for 1915. I may say that we have again received an intimation from the Minister of Finance that the levy is not to be accepted as a recurring one, and I trust that in this instance the Minister's assurance may prove correct. It is not that I object to increased taxation in such abnormal times as these. I fully realise the necessity for such a step, but I cannot agree to the doctrine that the mining industry should always be the first source of revenue to be tapped whenever the Government happens to be short of income, especially as we have always borne more than our fair share of taxation. We are not making "war profits." On the contrary. Our essential stores and materials are only obtainable at a heavy and steadily increasing additional cost; our lower-paid employees are receiving a special cost of living; and in addition we are paying substantial allowances to all our men on active service. Moreover, so far from our product of gold realising a higher price on account of the war, we are really receiving less for that valuable commodity by reason of the fact that the freight and insurance on the gold is now costing us something in the region of 25s. per cent. as compared with approximately 6s. 6d. per cent. under pre-war conditions. These may not appear to be matters of vital importance in the instance of a highly-prosperous concern such as the Meyer and Charlton, but I can assure you that they constitute a formidable total of additional expenditure in the case of many other gold mining companies here not so fortunately placed.

Development Work.

In view of the questions put to me by shareholders at the previous annual meeting, it may be well to direct your attention to the intimation given in the directors'

report for the past year, that the whole of the funds of the company are now either with British banks or invested in British securities.

Dealing with the subject of mine development, reference to the manager's report for the past year shows that 142,831 tons of Main Reef Leader were developed of an average value of 21.9 dwts. over 46 inches. The same report also records that the quantity of this reef stoped during the period was 90,030 tons, of an average value of 18.52 dwts. It will be seen, therefore, that the ore developed was in excess, both as regards tonnage and value of the ore mined. The fully developed ore reserves at the close of the year amounted to 485,246 tons of an average value of 12.56 dwts. per ton, as compared with 409,839 tons of an average value of 13.88 dwts. at the end of 1914. On the other hand, there were 46,366 tons of partially developed ore at 31st December. Just of an estimated value of 19.87 dwts. over stopping width, as against 8,483 tons of 4.84 dwts. at the end of the previous year, so that in the aggregate the reserves at the end of 1915 reflect practically the same value as at the close of the previous year, with an increase in quantity of over 63,000 tons. In the course of my address at the annual meeting of your company a year ago I announced that at the horizon of the bottom level of the mine (the 2nd) the Main Reef Leader had been intersected, assaying 38 dwts. over 46 inches. Since that date 380 feet have been driven and sampled east of the shaft, giving an average value of 33.5 dwts. over 46 inches, and 260 feet have been driven and sampled west of the shaft, assaying 43 dwts. over 46 inches. An interesting feature of the development of this level is that the Main Reef is found immediately under the Main Reef Leader, and in the west drive gives an average of 5.2 dwts. over a stopping width of 78 inches for 215 feet sampled. In the east drive the Main Reef is not so fully exposed, but where exposed and sampled it gives a value of 4 dwts. over 39 inches. Somewhat similar conditions have been met with in the 20th level east drive, in which the Main Reef Leader averages just upon 19 dwts. over 46 inches. In the last 80 feet driven the Main Reef is payable, giving an average value of 8 dwts. over 25 inches. The two reefs together indicate a value of 15 dwts. over 71 inches. It has occurred to me that these references to the lower levels may possibly lead some shareholders to infer that the mine is being rapidly worked out. This would certainly be a misapprehension and I therefore think it as well to state that from the data available to us (and the property is largely developed to render a fairly reasonable estimate possible), I look for a life of at least 10 years from this date. You will, I am sure, appreciate the fact that it is difficult to gauge such a question as this, because so much depends on the quantity of South Reef and Main Reef which may be ultimately brought into the category of payable ore; but I can confidently say that the Main Reef Leader (which is the rich reef of the mine) has now been proven to such an extent as to justify us in looking forward to unabated prosperity for your company to the end of its existence. In conclusion, I have much pleasure in testifying on behalf of your board to the able and conscientious manner in which your manager, Mr. H. C. Nich, continues to carry out his duties. Mr. Nich is not one of those who think that because the grade of a mine is high, and the profits consequently large, there is no necessity to worry about working costs; he realises that even a rich mine should be economically and efficiently run, and his efforts in this direction are fully appreciated by us.

Mr. Corder, seconding the motion to adopt the report, took the opportunity on behalf of the shareholders to congratulate Sir George on his long occupancy of the chair—an occupancy that had been very much to the advantage of the shareholders.

Mr. Birch associated himself with Mr. Corder's remarks, and Sir George expressed his thanks.

The report was adopted and the retiring directors, Mr. Leopold Albu and Mr. Arthur French, were re-elected.

ROODEPOORT UNITED.

At the annual general meeting of shareholders of the Roodepoort United Main Reef Gold Mining Company, Ltd., on May 20th, Sir George Albu, who presided, made an important announcement as to the results of development of the 20th level.

The Chairman, in moving the adoption of the report and accounts, said:—Although the accounts for the past year appear to show very little material improvement, I think I shall be able to demonstrate in my later remarks to-day that the outlook for your company is much more cheerful than on the occasion of my addressing you at the annual meeting a year ago—in fact that the position is more promising than at any time since the acquisition of the Kimberley Roodepoort property. Before, however, entering on a detailed statement of the causes which lead us to take these optimistic views, I will give my usual review of the results for the past year. Dealing with the balance sheet, at the 31st of December last, a comparison with the previous account would at first sight give the impression that the financial position is decidedly worse, by reason of the fact that the company's liabilities to the General Mining and Finance Corporation and under the heading of sundry creditors have increased—the former by £17,847 and the latter to the extent of £5,564. As a matter of fact, however, these increases are almost entirely counterbalanced by the larger amounts shown on the other side of the balance sheet in the shape of cash and other liquid assets; for instance, stores on hand are higher by £1,936, gold in transit and cash at bank by £12,768, investments by £893, and sundry debtors and payments in advance by £3,886—or in all £19,473. There remains a deficiency of approximately £4,000 between the increased cash assets and the gross liabilities, which is accounted for by additional capital expenditure amounting to £1,723 and the net loss for the year of £2,320. Before leaving the subject of the balance sheet, I desire to point out that notwithstanding the increased ore reserves at the end of the past year, to which I shall refer later, the amounts charged to working costs in respect of development and redemption were £1,610 in excess of the actual cost of the development effected. The profit and loss account shows a gross profit (including sundry revenue) of £21,113, after deducting from the value of the gold won for the year an amount of £2,346 in respect of the estimated additional charges for freight and insurance on gold unrealised; this deduction is necessary in consequence of the new arrangements made with the Bank of England during last year, which include a considerably higher estimate for freight and insurance than we had hitherto been paying, and which is, of course, due to the influence of the war. Working costs came out at 17s. 2d. per ton crushed, or an advance of about 3½d. per ton as compared with 1914; the increase is more than accounted for by the higher prices for mining supplies and allowances to employees on active service. On the other side of the account, the recovery value of the ore milled at 18s. shows an increase in grade of 4½d., which, together with the fact of some 57,000 tons having been crushed in excess of the figure for the previous year, is responsible for an advance in working profit of £4,129 as compared with the latter period. As a matter of fact, the profit and loss account does not reveal the important point that for the last four months of the year under review, when the improvement which has since been fully maintained was first made manifest, the working profit amounted to £14,214. After charging out interest on loans, £21,117, and £2,315 for assessments in respect of miners' phthisis compensa-

tion, the gross profit of £21,113 is converted into a net loss for the year of £2,315.

Improved Values.

Turning to the development effected during the past year, your directors in their report called special attention to the remarks of the manager in connection with the more normal dip of the reef now being met with in the Kimberley main section, and the favourable influence which this change is bound to have in the matter of development costs. You will readily appreciate that the necessary cross cuts from the shaft for the purpose of intersecting the reef at the different levels are in the nature of "dead work," as in themselves they develop no ore, and it is therefore a matter of considerable importance—both as regards time and money—if these crosscuts intersect the reef at a distance from the shaft of 50 or 60 feet, instead of several hundreds of feet as heretofore. A still more vital subject, however, is the improved values encountered below the 15th level in the Kimberley main section in the development last year of both the South Reef and the Main Reef. This is only partly reflected in the ore reserves at December 31 last, as only 68,000 tons were included from this area in the 720,509 tons shown as being fully developed, payable, and which nevertheless represent an increase of approximately 150,000 tons as compared with the 1914 figures. It will interest you to know that the development work since effected has continued to disclose highly satisfactory values, as will be seen from the following details of the footage driven, risen, etc., for the four completed months of this year:—South Reef: Average value of all work on reef, driven, risen, and sunk from 16th to 19th levels, 1,030 feet, 9.9 dwts. over 42 ins. Main Reef: Average value of all work on reef, driven, risen, and sunk from 16th to 19th levels, 500 feet, 6.1 dwts. over 51.9 ins. Combined average for this work 1,330 feet, 8.5 dwts. over 44.4 inches. No unpayable reef has been met with. The foregoing figures refer entirely to the Kimberley main section, and, as you will notice, deal with the area of ground lying between the 16th and 20th levels. It is estimated that the reef content of this particular area, now being rapidly opened up, are over 1,250,000 payable tons, on the basis of the south reef being wholly payable and the main reef 40 per cent payable. Now the main point, of course, is whether we can reasonably look for this percentage of payability. It would almost seem that we can, if we take into consideration two important facts:—Firstly, that the whole of the footage so far driven has disclosed payable values both on main reef and south reef, and, secondly, that 4,090 feet (representing about 25 per cent of the whole of the footage required to fully develop the blocks) have already been driven, risen, etc., giving an average value of 8.2 dwts. over a stope width of 40 inches. In the face of these figures I do not think we can be required to be really satisfied with the results of the development, and, in all events, of the ground in question will prove payable, and of a higher value than the average mine value as shown by the ore reserves. Let me add that it is practically intact, as only about 9,000 tons of ore have been mined below the 15th level up to the present time.

Profits Increasing.

I now turn to the results obtained from milling operations during the current year. As I stated in the earlier stages of my address, the improvement shown in the last part of 1915 has been fully maintained, the monthly profits so far this year being as follows:—January, £5,501; February, £5,277; March, £6,004; April, £6,027. In considering these figures I would like you to bear in mind that the results have not been obtained by drawing (except to an infinitesimal extent) on the richer ground to which I have just referred. As a matter of fact, your manager informs me that we must not expect to mine any appreciable portion of the tonnage lying below the 16th level for several months to come,

as only one connection has so far been made, and it will therefore probably not be before October or towards the end of the year that any appreciable quantity of ore from this area will be available for stopping. There is only one further point in relation to the development of the Kimberley Main mine to which I need refer to-day, and this is that the excessive faulting met with in the upper levels is now disappearing, with the result that the length of strike on reef to the main fault east of the shaft is materially increasing at the 20th level, and that this increase will be more marked as each succeeding level is opened up. Gentlemen, I venture to think that the foregoing remarks will justify the hopeful views which we now hold in regard to your property. I have endeavoured to show the importance and improved values are bound to have on the prospects of the company. There are approximately 220 claims still intact in the Kimberley section, continuing both South and Main Reefs, and although nearly all the South Reef has been taken out from the old Roodpoort United mine, the latter still contains a huge tonnage of Main Reef, which is being profitably worked at the present time. As you are aware, the mill has a crushing capacity of 60,000 tons per month, and a comparatively small capital expenditure is needed to extend the treatment capacity of the cyanide works to a corresponding figure. If, as we hope, the favourable development continues in the lower levels of the Kimberley mine, we shall in the course of the next few years be justified in increasing the cyanide plant to the extent required to deal with the larger tonnage I have mentioned. In the meantime we are gradually preparing for an increase up to 45,000 tons per month, which your manager considers the existing plant can cope with. It is with the greatest pleasure that I express the thanks of the board and my own personal tribute to the most valuable services which have been rendered by your manager, Mr. F. W. Girdler-Brown. I have no hesitation in stating that it is due in a great measure to Mr. Brown's pluck and energy that the fortunes of your company now really appear to be taking on what is, I hope, a permanent change for the better. He has worked very hard and under circumstances that would have utterly discouraged many men in his position, and for that reason, as well as others, I am very pleased that his efforts are being rewarded with success—a success which I trust will be still more marked in the near future.

A New Strike.

Just a few minutes ago, Sir George added, I received a telephonic message from the manager of the mine to say that as he had not been able to complete the crosscut for the reef at the 21st level before the meeting to-day, he had put in a diamond drill. Mr. Brown reports that he struck the reef yesterday 87 feet north of the shaft, and that the average value has just been ascertained. I am pleased to say that the result is satisfactory in the highest degree, even in the case of South Reef, quite compact, assay 7.7 dwts., which is equivalent to a value of 1.73 dwts. over a stope width of 40 inches. The chief importance of this strike is, of course, the indication which it gives that the improved values met with between the 16th and 19th levels, to which I have referred in my speech, are likely to continue in depth.

The knowledge that had just come to him, said the chairman in conclusion, would be pleasing in any circumstances, but the more pleasing because they had every indication that the reef from the 16th level downwards was very highly payable. He was full of hope that the future of the Roodpoort United would be at least equal to its early days.

The report was adopted and the retiring directors, Mr. Leopold Albu and Mr. V. J. Rouketti, were re-elected.

THE CINDERELLA.

An ordinary general meeting of shareholders of the Cinderella Consolidated Gold Mines, Ltd., was held

on May 30 in the board-room of the General Mining Buildings. Sir George Albu presided, and there were also present Messrs. Arthur French, J. Munro, H. W. Dalton, S. Benning, A. Sprinck, and J. V. Blinkhorn (secretary).

The Chairman said:—Gentlemen,—There is very little in the report and accounts submitted to you for the past year which calls for detailed comment on my part. The expenditure shown in the profit and loss account consists mainly of the outlays on claim licences, insurance, caretaking, taxes, etc., necessary in order to maintain the titles of your company and the supervision of the extensive stores, plant and machinery housed on the property. You will also observe that we are still subject to assessments in respect of miners' phthisis compensation in spite of the fact that no work has taken place underground for a period of over two years. As regards the financial position it will be seen that, excluding the liability for debenture interest (payment of which is deferred till the expiration of a period of 12 months from the termination of the existing war), our surplus liquid assets at the 31st December last amounted to £51,636, of which £23,509, however, was represented by stores on hand. On the other hand, there was a contingent liability of approximately £15,000 to the East Rand Proprietary Mines in respect of claims acquired from that company conditionally upon the lease of the Government ground being carried into effect. This matter has since the close of the year been satisfactorily arranged, and we have, therefore, paid to the East Rand Proprietary Mines an amount of £14,000 for the purchase of the claims in question, which have now been duly transferred to your company. The cash position at the present time, after making the payment just mentioned, is that we have roughly £8,600 in the bank, and stores, etc., on hand to the value of £23,281.

Former Consulting Engineer's Report.

I now come to a matter which I venture to think will be of considerable interest to you, and possibly of far-reaching importance as affecting the future prospects of the company. About six months ago Mr. George Denny, the well-known mining engineer, arrived in Johannesburg on a visit, after some ten years' absence from the Rand. Mr. Denny was for many years prior to leaving South Africa the consulting engineer to the group with which I am associated, and in that capacity was intimately concerned with the development of the mine from the initiation of the 12 and sinking operations on that property up to practically the date when he left the Rand, at which time the Cinderella Deeps shaft had reached the reef and the development was in progress. It will thus be seen that Mr. Denny's original association with your property goes back very many years. It occurred to me that this was a favourable opportunity of obtaining Mr. Denny's views on the position of the mine, which had, of course, materially altered and extended during his absence, and thus confirming, or otherwise, from an independent source the favourable opinion which personally I have always held of the potentialities of the large consolidated area which now forms the property of your company. With the approval of my co-directors I therefore arranged with Mr. Denny that he should make a thorough investigation underground of the mine, and in this connection I may say that every facility has been afforded to us by the chairman and the leading officials of the East Rand Proprietary Mines, both from the point of view of allowing access through their property to the Cinderella mine, and also in placing at Mr. Denny's disposal the underground plans of those sections of the East Rand Proprietary Mines bordering upon

and having a possible influence on your property, and natives and materials required for the mining operations in connection with the examination. Mr. Denny has during the last few months pursued a most careful investigation of the Cinderella Con. old workings, and to that investigation he has applied the exceptional mining and geological knowledge and experience which he is well known to possess. He is reporting on the results of his work and the general conclusions at which he has arrived, but the report is necessarily a most voluminous document, which has not at the moment been finally completed.

Summary of Main Points.

In view of our annual meeting to-day, however, I asked Mr. Denny to let me have a synopsis or summary of the main points brought out by his report, and this he has furnished to me in the following remarks. I should like to add that for a considerable portion of the period taken up by Mr. Denny's investigation he was at his own request furnished with a shift boss who had previously worked on the Cinderella Deep, and with a gang of natives, in order to enable him to carry out certain exploratory and prospecting work of a practical character.

One of the more important points brought out by my investigation into the conditions and working of your mine is that in certain sections of the property, more especially on what is termed the north section reef, but also to a less extent on the south section reef, the main reef leader, which is the chief gold-carrying ore body of the mine, has been left unexposed both in development work and in stopping operations. The theory held by the management to some extent justified—was apparently that the leader lying on the footwall quartzite could be taken as invariably constituting what may be called the "pay band." There are in fact three more or less well defined reef zones in the north section of the mine. Zone A extends eastward from the main fault, a distance of approximately 500ft.; zone B, beginning at the eastern limit of zone A, extends for another 500ft., more or less; and zone C, or the zone of average reef tonnage, extending eastward from zone B. In zone A both main reef and main reef leader occur, and both may carry a rich footwall leader, the reef being separated by a considerable width of quartzite. In zone B the main reef footwall leader, though still found over large areas, is absent in a certain proportion of the zone. The main reef leader is continuous throughout the zone, but the rich footwall leader disappears and the gold is more distributed in the reef. In zone C there are only few isolated patches of main reef footwall leader. The upper hands of the main reef and main reef leader appear to become closely associated, but the main reef leader bands are the best gold carriers.

Discussions regarding the separate enrichment of the two reefs have given rise to a development and stopping policy directed only to what was believed to be the footwall leader if the main reef. This has resulted in a neglect of the main reef leader in many parts of the mine, and also in taking the footwall leader of main reef, payable bands which are economically valueless lying in the quartzite between the main reef footwall leader. At various points in the mine exposures have been made of the pay reef bands, lying to the south of the reef exposed by the development. In case where an exposure has been made the assays are very satisfactory. Such exposures affect an area containing approximately 40,000 tons of ore, heretofore regarded as doubtful or unpayable. Whilst considerable development is necessary before the actual tonnage and average value can be ascertained, there is sufficient known of the area to enable a tentative tonnage and value to be given to it. For present purposes 34,000 tons of an average value of 8dwt. is assumed. On the indications we have, both the tonnage and value are very conservative.

The South Section Reef.

With regard to the south section reef, the same misconceptions obtained. It was not suspected that the main reef and main reef leader form virtually one reef, and it was supposed that payable gold could be found above the plane of the footwall leader. During my examination, therefore, crosscuts were made to expose the main reef leader in the western section of the mine, and to illustrate the effect of these exposures some figures may be given:—

Locality.	Original results.	Revised main reef leader results.
First level from boundary to fault No. S.1.	4.5dwt.	7.53dwt.
Rise from 3,900ft. to 3,500ft. levels	over 36in.	over 37.5in.
Rise No. 2, 3,500ft. to 3,620ft. levels	4.8dwt.	9.34dwt.
Rise No. 3, 3,500ft. to 3,620ft. levels	over 36in.	over 36in.
Rise No. 3, 3,500ft. to 3,620ft. levels	2.9dwt.	7.56dwt.
Rise No. 3, 3,500ft. to 3,620ft. levels	over 36in.	over 36in.
Rise No. 3, 3,500ft. to 3,620ft. levels	11.4dwt.	26.8dwt.
Rise No. 3, 3,500ft. to 3,620ft. levels	over 36in.	over 36in.

3,750ft. Level drive west from Feliste dyke to rise 1 S.W.S. ... 8.5dwt. 10.0dwt. over 36in. over 48in.

3,750ft. Level drive west from Fault No. S.2 W. to 1 S.W. 3 Stop ... 3.0dwt. 6.03dwt. over 36in. over 42in.

First level drive from Feliste Dyke west to boundary ... 4.6dwt. 5.7dwt. over 36in. over 36in.

*Main reef leader only partly exposed.

"This improvement in value has the effect of increasing the payable south section reserves in the west part of the mine by over 15,000 tons and of adding to suspected further important tonnage, of which a reasonable percentage may be expected to be payable."

The Ore Reserves.

"Summarising the position now obtaining as the result of the investigation I have just referred to my recalculation of the ore reserves in the mine is as follows:—Fully developed payable ore, 46,000 tons, averaging 7.1 dwt.; partly developed payable ore, 556,000 tons averaging 6.4dwt.; ore in suspense, possibly 50 per cent. payable, 458,000 tons.

"To ore in suspense much with propriety he added a large tonnage of partly exposed main reef leader, and also a considerable tonnage in the lower levels of the mine, due to an overvaluing of reef. These have, however, been excluded. For the sake of comparison, I give the ore reserves as contained in the annual report of your company at the 31st of July, 1915, shortly after shutting down the mine:—Fully developed payable ore, 114,000 tons, averaging 6.3dwt.; partly developed payable ore, 500,000 tons, averaging 7.3dwt.; ore in suspense, 2,000,000 tons.

"The further point brought out by my investigation is that, so far as I was able to judge, the values in the lower levels of your property are unequalled by anything in the levels above. The fifth level, for 5,000 feet driven and sampled on reef, gave an average value of over 10dwt. on the calculated width of 4 in. It must be borne in mind, however, that the values for the last 700 ft. of the distance mentioned, the full reef has not been exposed, and, therefore, the full width is not known; for the 700 feet mentioned the reef averages 8.4 dwt. over a width of 6in. On the sixth level the lowest level of the mine, which had only been advanced 200ft. east of the crosscut from the shaft at the time of shutting down the mine, the average value was over 30 dwt. on 6in., the last 55ft. of the drive averaging over 100dwt. on 5in.

Cost of Development in the Past.

"The expenditure on development unrecouped, as appearing in the balance sheet of your company, applied to the unusually large vis-à-vis the ore reserves as calculated by the mine management at the time of closing down the property. I find, however, that several heavy heads of expenditure have been charged to development account, which should be charged to capital expenditure. For instance, all permanent crosscuts which at the same time constitute permanent roadways, tramming and transport ways of the same nature as the main shaft, have been charged to development account. Three long connections driven regardless of expense to improve ventilation and provide exits from the footwall of the mine, charged to development account. Other matters influencing the comparatively high cost of development are: (a) The small labour force permitted to the mine owing to Government restrictions necessitated a high percentage of white labour, as mining operations largely consisted of machine drill work; (b) profound faulting necessitating expensive crosscuts and throwing development further and further from the shaft, and giving only one point of attack on each level. The direction taken by the faulted rim of the reef was such that on each successive level there was a great diminution in the reef area between the fault and the original boundary. (c) The strike of the reef being very oblique compared to the original boundary, giving very hindered development. (d) The boundary line above the connecting level between the central and west shafts, not being parallel to the reef strike, has seriously added the tonnage which that level would in normal circumstances have opened out. (e) The excessive temperature which undoubtedly sapped the energy of the men. (f) The large proportion of payable ore on the south section reef.

"With the exception of the lower percentage of payability of the south section, none of the other difficulties mentioned above can be regarded as more than temporary, to be relieved in the immediate future, but their influence was greatly felt in the cost of past development, unduly raising the cost. Furthermore, in considering the future prospects of the south section of south section, in mind that a large portion of the reef has hitherto looked upon as doubtful or unpayable, has now, with better reef exposure, been shown to be payable. Again, in the north section, owing to misconceptions regarding the nature of the area previously included as doubtful and unpayable is now shown to be quite normal as the result of proper reef exposures having been made. Seeing that such a large tonnage may now be included as developed or partly developed payable ore, which was formerly rejected as unpayable, I estimate that the total cost of development in the past in spite of all difficulties,

ties, will not be found to have exceeded 3s. 6d. per ton, exclusive of charges which should have been otherwise apportioned.

Future Development.

"Once the connection has been made to the central shaft, there is no reason to believe that the development cost will be above the average for the mines of the district. Taking the ore reserve estimates on north section and the actual ore mined, the area has yielded 100 per cent. payable development. Also, in viewing the question of future development regard should be had to the width of the reef on the 5th level, which in places widens out to 8ft. of ore of good grade.

Percentage of Waste Rock Mined.—An analysis of the past slope face sample sheets shows that the ore mined contained about 55 per cent. of waste rock, of which only 13 per cent. was sorted out. It follows, therefore, that the clean reef must have had a value of approximately 58s. per ton.

Water in Mine.—The water at present lying in the lower levels of your property has undoubtedly accumulated from the workings of the East Rand Proprietary Mines almost entirely. I may add that the time of my examination the mine had been closed down for about two years, but even during that period the water level had not risen beyond a point below the 3rd level of the incline shaft.

Condition of Mine.

"It is interesting to note that no dangerous condition of the underground workings was apparent after the comparatively long period which has elapsed since the suspension of operations. In fact, some of the oldest stopes are still perfectly accessible. In some instances the rotting of timber has let down the hanging-wall of stopes, but only in slabs, and these generally of reef matter, much of which can subsequently be profitably milled. The expense will undoubtedly be need when work is restarted but nothing of an alarming character. The existing connections are invaluable as means of exit in case of necessity, but for ventilation purposes are of use to the East Rand Proprietary Mines. It can be accepted that it will be practically impossible to get good conditions in the matter of temperature and the central shaft, which has been connected with the Cinderella Deep shaft, after which you should have no difficulty in controlling your own air inlets and outlets independently of your neighbour.

Future Programme.

"The future programme which I unhesitatingly recommend as the result of my investigation may be divided into three stages:—

Stage A.—Two years for further development and connection of the West (Cinderella Deep) and Central shafts.

Stage B.—Resume milling operations at the maximum capacity of the present plant, which, with comparatively slight alterations and additional tonnage, should represent a capacity of about 2,000 tons. Simultaneously continue development at all parts of the mine, and in addition explore the ground to the east of the Central Shaft. I estimate a period for this stage of two years.

Stage C.—This should be the crowning stage of the mine's career. If the eastern ground could prove favourable, I would recommend the sinking of another shaft in that portion of the property, and an increase in the milling capacity proportionate to the ore developed. No useful estimate is possible at the present time of the ultimate milling capacity, but I consider that it should be much more than a million tons per annum under the circumstances which I have indicated, and that it can hardly be less than that figure.

Cost of Stage A Programme.—Excluding all head office charges and standing charges of every kind, I estimate the cost of completing this programme at £330,000, including shaft sinking and equipment.

Payable Ore Reserves at the end of two years (on completion of Stage A Programme).—My approximate estimate, after making liberal allowances, is that 2,000,000 tons of payable ore should be fully developed, and a large additional tonnage partly developed."

Early Difficulties.

Now, gentlemen, you will readily appreciate the fact that the foregoing synopsis of Mr. Denny's report is only intended to convey some of the main points brought out by his investigation. It is necessarily rather lengthy, because it covers matters dealing with the past history of your company which, as I stated in my preliminary remarks, are of the utmost importance in considering the future prospects of the mine, and each point is of such vital interest that it seemed impossible to cut out or abbreviate it. For these reasons I make no apology for taking the somewhat unusual course of including an epitome of a technical report in my address to you to-day. One aspect of the synopsis, however, which I desire to allude to is the suggestion which might possibly be gathered from it that the management of the mine prior to closing down in 1913 was of a superficial or inefficient character. Mr. Denny

especially emphasises in the introductory paragraphs of his report that "a perfectly good answer to most criticism is afforded by a study of the conditions under which the mine was worked." He realises, as fully as we do, the exceptional difficulties under which the work had to be carried on—the stringent restrictions placed upon us by the Government, owing to our having only a single outlet to the mine, the bad ventilation due to the same cause, the inferior type of workman which we had often to accept because of these disadvantages, and last, but not least, the constant struggle and tension involved in endeavouring with a totally inadequate labour force to carry on normal mining operations for the supply of ore to the mill, and at the same time energetically prosecute the ambitious scope of development work necessary for opening up the lower levels of the deep shaft and the connecting and exploratory drives which were being pushed forward with all possible speed towards the central shaft. I think there is small cause for wonder that under such circumstances, and with quite unusual and conditions which were not fully understood, there should subsequently be found to be many instances of both development and stopes faces being off the real pay band. I freely confess, however, to a very cheerful readiness to bear any reproaches that might be cast up at us in this respect as the result of Mr. Denny's report when the same document most convincingly points to the much more valuable character of the ore lying in our big area, and its considerably higher percentage of payability than the position of the mine appeared to indicate at the time of closing down. There is another question arising out of these disclosures which I am glad to say can be satisfactorily answered. In view of the many instances in the past where the real Main Reef Leader has apparently not been exposed in the working faces, I have asked Mr. Denny whether the same risk would present itself in future mining work. He answers me that with the new light which his full report will throw upon the position of the reefs and the trend and influence of faults and breaks as investigated by him, there should be no difficulty whatever in carrying out clean and efficient mining work on the proper ore bodies.

Position Summed Up.

In summing up the position as it appears to-day, after taking into account the results of Mr. Denny's profound investigation, the salient points may be stated as follows:—The reefs both on north section and south section possess a larger percentage of payability and higher average values than our previous reports would indicate. Even in what is shown on the block assay plans as stoped-out areas it will be found that owing to the Main Reef Leader being left in the hanging, a considerable tonnage of payable ore remains to be extracted. The payable ore reserves in the mine consist of 1,024,800 tons of fully and partly developed rock of an average value of close upon 7 dwts., instead of 637,000 tons (fully and partly developed) as previously recorded. The ore in suspense, of which a large portion is likely to prove payable, is calculated at 495,000 tons, as compared with the figure of 207,000 in our previous reports. The abnormally high working costs prevailing during the milling period, which were entirely due to exceptional working conditions, will not recur, as after the connection of the deep shaft with the new central shaft conditions should be quite as favourable as in the case of the neighbouring mine. Future development should, in Mr. Denny's estimation, be capable of being carried out on easier lines, whilst opening up a larger tonnage of payable ore than we had been previously advised as probable. The condition of the mine, as found by Mr. Denny, instead of being in a state of chaos owing to its reputed extremely dangerous character, is, on the contrary, after being closed down for over two years, quite normal; in fact, Mr. Denny ridicules the theory so widely circulated and so generally accepted that there is any exceptional risk whatever in the case of your mine. In short, the whole report goes to show that we were fully justified in effecting the big consolidation of the property some six years ago, and

that, with adequate funds to complete the shaft-sinking and development programme embarked upon at the time of that consolidation (and which, I may remind you, had progressed to a very considerable extent when lack of the requisite working capital compelled us reluctantly to suspend operations in 1913), there is no reason whatever why the mine should not prove the sound and payable proposition which many of us have always believed it to be. Whether it will be possible in the immediate future to obtain these additional funds is a question on which I can offer no definite opinion, but I can confidently state that the altered aspects which I am able to place before you to-day will undoubtedly assist us in our endeavour. That eventually we shall recommence operations on this property I have not the slightest doubt.

The report and accounts were adopted. Messrs. S. B. Joel and J. Munro were re-elected to the directorate.

Messrs. Douglas, Low and Co. were re-appointed auditors.

WEST RAND CONSOLIDATED.

Sir George Albu presided on May 29 at the annual meeting of the West Rand Consolidated Mines, Ltd. The report of the directors and the accounts were adopted, and Messrs. W. H. Dawe and S. C. Black were reappointed to the board.

In moving the adoption of the report Sir George said:—The outstanding features of the past year's work which are presented by a study of the annual reports and accounts are the considerable augmentation of the ore reserves and the material increase in the working profits earned. Both these factors may be regarded as very satisfactory, especially in view of the abnormal conditions prevailing by reason of the war, such as heavy increased costs of mining supplies, the absence from the mine of efficient employees on active service, etc. On comparing the profit and loss account with that for the preceding twelve months, it will be seen that the working profit for the past year shows an increase of £27,472. If we leave out of account the deduction made for additional charges imposed by the Bank of England in respect of freight and insurance on gold unrealised, the recovery value per ton milled at 24s. 3d. is practically the same as for the previous year, and this figure reflects the results of the policy, to which I referred in my remarks at the annual meeting a year ago, of maintaining the grade of the ore mined as near as possible to an average value which will give a yield of about 24s. per ton. Of course, it is impracticable to so closely regulate each month's stoping as to yield an arbitrary figure of this kind; this aspect was illustrated by the higher recovery and profits obtained in the months of August, October and November last year, owing to a temporary general enrichment of the stopes under attack. But it is possible to arrive at results over a period of 12 months which will average out at approximately the desired figure. Working costs at 19s. 1d. show a welcome diminution of 10d. per ton, notwithstanding the adverse influences which I mentioned in my opening remarks, the decrease being attributable in the main to a reduction of 4d. per ton under the head of mining, which in turn is due chiefly to the facilities afforded by the mechanical haulages now installed at the sixth level in the west shaft. By reason of this lower scale of working expenditure, and the crushing of some 38,000 additional tons, the working profit for the year increased to £93,331, which, with the addition of sundry revenue to the amount of £16,837, gives a gross profit for the period of £110,367. After providing for interest, etc., on debentures, profits tax, and other Government taxes, and miners' bithosis compensation, amounting together to £44,613, there remained a net profit for the year of £65,754, which, as I shall show directly, was actually utilised in additional expenditure on mine equipment and development during the year, and in the £31,203, but of this amount £27,000 redemption.

Burden of Taxes.

Turning to the balance sheet, it will be seen that the debentures in issue have been reduced to £444,410 by the purchase of £25,320 debentures; these were bought at a total discount of £2,728. Sundry creditors at £59,403 reflect an increase of £31,203, but of this amount £27,000 represents sight drafts on London against gold. The balance of the liability to sundry creditors consists of the ordinary monthly trade accounts, etc. As regards the provision for the war levy, shareholders will notice that we have only included one-half of this company's estimated proportion of the levy in the 1915 accounts, and that the remaining moiety is to be charged against the current year's profits. We adopted this course in consequence of an assurance last year from the then Minister of Finance that the impost was not to be regarded as of a recurring nature, and that the levy is to be apportioned over two years. Subsequent to the preparation of the balance sheet, however, it was announced in the session of the Union Parliament now sitting that the Treasury intended to make a further levy of £500,000 on the gold mining industry for the fiscal year 1915-17. Consequently your company's accounts for 1915 will be subject to a charge of at least twice the amount debited in this connection in the profit and loss account for 1915. I may say that we have again received an intimation from the Minister of Finance that the levy is not to be accepted as a recurring one, and I trust that on this occasion the Minister's assurance may prove correct. The remaining items on this side of the balance sheet require no comment. On the credit side of the account it will be seen that property account has been increased by £5,637, being the purchase price of the claims acquired from the liquidators of the Lancaster West Company referred to in the report of your directors. The additional expenditure on mine equipment and development for the year consists of £25,724 for further sinking of the three main shafts of the property (the East, West, and Rand shafts), £27,646 on new plant and machinery installed, and £10,436 for the additional cost of development over and above the amount charged in this connection to working costs. I may point out that this represents about 8d. per ton on the tonnage added to ore reserves during the year. Stores on hand, at £27,651, show an increase in value of approximately £14,680, as compared with the position at the close of the previous year. This is due to the policy which we have deemed it advisable to adopt, by reason of the war, of bringing up our stocks of essential stores to six months' supply, in order to provide for contingencies, and I may say that in continuation of that policy further purchases since the close of the year have brought up stores account to £45,753, as at the end of last month. In other words, we have temporarily invested over £33,000 of cash since December 31, 1914, in additional supplies. The only other items in the balance sheet to which I need refer are the gold in transit and cash at bankers, etc., which together amount to £204,150. As a matter of fact, the actual financial position (as set out in your directors' report for the year) is that the excess of liquid assets over current liabilities at December 31 last was £219,799, but this is after the inclusion of certain assets, such as stores on hand, investments, and sundry debtors, etc. If we exclude these items, then the cash in hand, after providing for current liabilities, was £124,882.

Utilising Profits.

I am going into these details for the purpose of demonstrating to shareholders that, notwithstanding the large amount of £276,546 shown in the balance sheet as unappropriated profit, we have not sufficient cash at our disposal to pay a dividend, except at the sacrifice of the funds which we are conserving for the large increase to the milling capacity of the company, which we intend to undertake as soon as possible after the expiration of the war. But in another way, the profits earned

uring recent years have really been utilised for the capital expenditure involved in the additions from time to time of plant and machinery, and in excess shaft sinking and development well ahead of current requirements, in order to prepare the mine for the largely increased monthly tonnage which will be demanded of it by the projected expansion of the treatment capacity to which I have just referred. As a practical instance of these remarks, I will take the case of the profits for last year. The net profit was £65,754, of which £25,320 was used in the redemption of debentures, leaving £40,434 apparently available. On the other hand, however, the capital expenditure for the period amounted to £49,443, so that not only was the net profit insufficient to cover these outlays, but we had to trench to the extent of £9,009 on the cash position brought forward from the previous year. The manager's report states that 16,286 feet of development work was effected during the past year, of which 8,812 feet were on main reef and 7,474 on battery reef. This is an increase of about 3,550 feet on the footage accomplished in 1914, and is due to the considerably larger scope of work undertaken in the east and west shafts of the property, which deal entirely with the main reef. As regards the east shaft, you will perhaps remember that shaft sinking and development were suspended in 1914, but after the acquisition of the new ground from the Lancaster West (Company) it was decided to resume development operations in this section, with the view of opening up the ground lying between the east shaft and the newly-acquired claims, and at a later date of joining up with the workings already developed by our predecessors in the latter area. In this respect 1,697 feet of driving, etc., were effected, and the shaft was sunk a further 162 feet. As a matter of fact, the 10th level east from the shaft has reached the horizon of the corresponding level in the new claims, but the connection cannot be holed through until the necessary arrangements have been made for coping with the water which will be met with in the workings of the Lancaster development. By far the larger proportion of the development work on main reef, however, has been carried out at the west shaft. You will possibly remember that at the close of the previous year we were just commencing to open out the 12th and 14th levels in this shaft. During the past year 1,522 feet were driven, risen, etc., on the 12th level, 2,153 feet on the 14th level, and at the end of the year the 16th level had been intersected in the east from the shaft, and was being driven upon. In addition to these workings, a total of 2,563 feet of development was carried out at the 6th level—in the sinking of the auxiliary incline shaft and in opening up ground to the east and west of that incline. I am pleased to be able to add that the values disclosed by the considerable development work to which I have referred in this (the west) shaft are quite up to the average mine value. In fact, the ground is very similar to that met with in the No. 3 outcrop section immediately above, in that it appears to be almost entirely payable. With regard to the battery reef, energetic development operations have been continued during the year. In the area commanded by the Rand shaft 6,570 feet (of which 4,509 feet comprised driving) were accomplished, with similar results to those experienced in previous years, i.e., a very large proportion of payable (and some long stretches of highly payable) ore. This section contributed approximately 25 per cent. of the total ore sent to the mill from all sources last year, a value of the rock treated as a whole. The Flora shaft has been continued in depth below the 6th level, and the latter level has been extended north and south of the shaft, for the purpose of prospecting the ground lying at this horizon. At a later date the 6th level south will be connected up with the corresponding drive north from the Rand shaft. As indicated in your manager's report for the past year, the values met with in these pilot drives have been poor, but we are continuing with the policy previously laid for this section, in order to prove the ground, and with the possibility, of course, that payable ore may be encountered later.

Ore Reserves.

I have attempted in the foregoing remarks to represent an intelligible review of the extensive development effected last year, and it is gratifying to know that the work has been rewarded in a satisfactory manner, as illustrated by the large accretion to the ore reserves at December 31 last. For the purpose of comparison I give the fully and partially developed reserves, etc., as at the end of 1914 and at December 31 last respectively:—

December 31, 1914.—Fully developed payable, tonnage 1,453,000, value 6.05dwt.; partly developed payable, tonnage 340,000, value 7.0dwt.; fully and partly developed ore, for which a definite value cannot at present be given, tonnage 412,000.

December 31, 1915.—Fully developed payable, tonnage 1,383,380, value 6.1dwt.; partly developed payable, tonnage 255,793, value 6.4dwt.; fully and partly developed ore, for which a definite value cannot at present be given, tonnage 551,000.

We had, therefore, at the end of the year over 2,000,000 tons of payable ore in sight, by far the greater portion of which is fully developed, reflecting an increase of over 300,000 tons on the position at the close of the previous year, and, in addition, 551,000 tons of ore fully and partially developed, which are expected to yield a considerable portion of payable ore. It is obvious, therefore, that with this tonnage on hand, and in view of the huge extent of your property of close upon 2,000 claims, the present crushing capacity of 32,000 tons per month is inadequate, and in ordinary circumstances your board would have had no hesitation in placing orders for an extension of the mill and cyanide works, to allow of treating at least 45,000 tons monthly. We felt, however, that under existing conditions it would be unwise to undertake the new construction work at the present time. The prices for practically all materials, plant, etc., are abnormally high, and, moreover, it is impossible to obtain new machinery from Great Britain, and only on onerous terms as regards date of delivery and price from America. We have, therefore, decided to leave the projected extension until after the expiration of the war, or until the present unfavourable conditions have disappeared. In the meantime the two additional tube mills referred to in the report of your directors have been erected, and are in service, with the result that we shall now be in a position to crush at the rate of 36,000 tons per month. Since the date of the reports and accounts the connecting drive on the 12th level between the east and west shafts has been holed, with the result that the working conditions of the lower levels in this area have greatly improved. On the other hand, your manager reports that the white labour force is both scarce and, in some respects, inefficient, especially in regard to machine and hand stopping. He also states that the effect of the increased price of stores and materials is responsible for an additional expenditure of approximately £1,700 per month, equivalent to an increased working cost of 1s. per ton. Such influences as these, and also the extra cost of realising our gold, must be taken into account in studying the returns from the mine; but, per contra, we can fortunately regard these as being of a temporary nature, and as likely to disappear after the termination of the war. Then with the increased milling capacity and the further opening up of the property I feel confident we shall be able to make a very different showing in the direction of revenue and profits, and one more commensurate with the huge potentialities of this property. In conclusion, I have much pleasure in expressing the appreciation of my co-directors and myself of the services rendered by your manager, Mr. D. T. Morton. The award by the "Safety First" Committee of the first prize for their Competition No. 1 (for the lowest accident death-rate among underground employees) to the officials of your mine is a tribute both to those officials and also to your manager, and I feel confident that in heartily congratulating the whole of the underground employees on their record of no death from accident during the year I am only echoing your sentiments.

WIT DEEP, LTD.

The annual meeting of shareholders of the Witwatersrand Deep, Ltd., was held in Cullinan Buildings on May 26. Mr. W. H. Dave presided, and others present were: F. C. Dumat, E. Rothschild, H. W. Anderson, A. Mackie Niven, M. Honnet, W. H. B. Frank, A. G. Gill, J. J. Hardwicke, L. J. Bourne, S. B. Golreich, S. Rosenzweig, R. A. Kearns and H. G. L. Panchaud, secretary.

In moving the adoption of the annual report and accounts, the Chairman said: The financial statements, together with the directors' report and the reports of your consulting engineer and manager, are for the financial year which ended on the 31st December last. In dealing with them I will, in the first place, refer to the information regarding the mining operations contained therein, as consideration of this part of the subject will facilitate our consideration of the financial results. Reference to the consulting engineer's report shows that a larger tonnage was milled during the past year than in 1914, but the value of the yield per ton was 9.46d. less, and there was an increase of 8,09d. in the working costs per ton, consequently there was a decrease of 1s. 5.55d. in the profit per ton milled, and the total profit was £37,323 less than that of the previous year. In regard to the working costs, the increase is due to the higher prices of stores, as compared with the prices ruling before the war, as the following will show: Comparing the month of March, 1916, with March, 1914, we find that the cost of stores was increased by say £1,400, equivalent to 8d. per ton milled, on a tonnage of 42,000 tons. In addition to the increased cost of stores we have to take into consideration the higher costs of realisation of the gold, which is approximately £700 per month, and the amount of the allowances made to those of the company's employees who are on active service with the consent of the management. The question of the grade of ore milled I will refer to a little later.

Progress of Development.

The development footage accomplished during the year was 9,953 feet, which includes 742 feet of shaft sinking, and this is a little lower than that of the previous year, and considerably lower than the figure for 1913. The reason is that with the increased depth of the workings the number of faces from which development can be carried on has become more limited. This position is the outcome of the water difficulty, which caused a considerable delay in starting the sinking of the east auxiliary shaft. The sinking of the west subsidiary shaft is now practically finished, and further development in depth will be limited to the deep level claims, in the eastern portion of your company's property. There is still some development work to be completed in the western portion, north of the East Rand dyke, and in the south-western portion of the property, above the deep level section. The ore developed during the past year is estimated at 375,437 tons, of an average value of 6.3 dwts. over 55.6 inches, as compared with 395,600 tons, of an average value of 5.8 dwts. during 1914, thus showing a slight decrease in the tonnage, with an improvement of half-a-pennyweight per ton in the value. These figures, however, are the result of the whole year's working; but if we take the results for the first seven months of 1915 we find that we obtained 177,571 tons, with an average value of 5.5 dwts. per ton, whilst for the remaining five months the tonnage was 197,866 tons, with an average value of 7 dwts. per ton. In 1914 the ore developed gave an average value of 5.8 dwts. per ton, which was 1 dwt. less than the average value for 1913. You will see, therefore, that the lower value obtained in 1914 continued for the first

The profit and loss account reflects the results of the trading operation, and the balance sheet shows the position of the business at the end of the year. The profit and loss account is prepared first, and the balance sheet is then prepared. The profit and loss account is prepared by adding together all the incomes and deducting from them all the expenses. The balance sheet is prepared by adding together all the assets and deducting from them all the liabilities. The profit and loss account is prepared by adding together all the incomes and deducting from them all the expenses. The balance sheet is prepared by adding together all the assets and deducting from them all the liabilities.

to provide against any possible shortage of imports from overseas, has involved the temporary locking up of funds which, in the case of this company, form a considerable financial item. For instance, the value of the ordinary stores and materials on hand at the 1st January, 1915, was £3,472; at the 31st December last the amount had risen to £7,360, while the corresponding figure at the end of last month was £18,488. In other words, the profits for the four completed months of the current year have been almost entirely absorbed in the purchase of additional stores. Of course, it is not intended to maintain this position, which will be gradually relieved at the termination of the war, as soon as possible after which the stock of stores, etc., will be brought down to normal proportions.

The War Levy.

There is one other point to which I wish to direct your attention before concluding my review of the past operations. It will be noticed that we have only included one-half of this company's estimated proportion of the war levy in the 1915 accounts, and that the remaining moiety is to be charged against the current year's profits. We adopted this course in consequence of an assurance last year from the then Minister of Finance that the impost was not to be regarded as of a recurring nature, and that therefore it might equitably be apportioned over two years. Subsequent to the preparation of the balance sheet, however, it was announced in the session of the Union Parliament now sitting that the Treasury intended to make a further levy of £500,000 on the gold mining industry for the fiscal year 1916-17. Consequently your company's accounts for 1915 will be subject to a charge of at least twice the amount debited in this connection in the profit and loss account for 1915. I may say that we have again received an intimation from the Minister of Finance that the levy is not to be accepted as a recurring one, and I trust that on this occasion the Minister's assurance may prove correct.

Now as to the future. Given normal conditions and no interference with mining operations, I think I may predict that the company will enter the dividend-paying stage in the course of next year, and in making this statement I am assuming that the capital will not be increased beyond the existing issue of £106,352 10s.—that is to say that the company's liabilities will not be capitalised either in part or the whole, but will be gradually liquidated out of profits earned. I need hardly point out that on this basis of capital the profits earned by the mine, even if only taken at the present standard, will enable the distribution of dividends equivalent to a highly satisfactory annual percentage on the existing shares. Moreover, it is reasonable to suppose that after the termination of the war working costs should be favourably influenced by a return from the abnormally high prices of stores and materials now prevailing to the pre-war standard, and also by the discontinuance of the allowances which are being made to employees at the front. A further burden of the war will also be removed in the matter of the heavy additional cost of freight and insurance on the gold at present obtaining. It will be evident, therefore, that the profits of your company are likely in the future to reflect an increase on the existing scale, and this is a point to be considered in view of the probability that the mine has still a life of at least ten years, as far as I can see. I have much pleasure in again referring to the valuable services rendered by your manager, Mr. J. K. Digby, who continues to evince a very personal and enthusiastic interest in his work and the mine.

The report and accounts were adopted. Messrs. Leopold Albu and Arthur French were re-elected to the board. Messrs. Fraser and Mackenzie and Henry Hains were reappointed auditors.

RAND COLLIERIES.

The ordinary general meeting of shareholders of the Rand Collieries, Ltd., was held on May 29th in General Mining Buildings. Sir George Albu presided.

The Chairman said:—I regret to state that I have nothing of practical interest to say to-day in connection with the prospects of your company. It has been quite impossible to enter into any negotiations during the past year which would have had any real influence on the raising of additional capital, and therefore the mine has necessarily remained closed down. Nor can I hold out any definite hopes of its resuscitation in the immediate future, having regard to the abnormal conditions at present prevailing in the money markets of the world as a consequence of the Great War. The expenditure has again been confined entirely to the upkeep of your property and payments in respect of secretarial and other office expenses, which have been cut down to a minimum. The total outlay for the year in regard to these necessary items was £2,193. On the other hand, we received sundry revenue from rents, etc., amounting to £1,450, so that the net expenditure for the period was only £613. Your company's liability to the General Mining and Finance Corporation has increased by £14,141, which, however (with the exception of a few hundred pounds), represents further interest for the period on the loan.

The report and accounts were adopted. Messrs. Leopold Albu and Arthur French were re-elected directors.

Messrs. Fraser and Mackenzie were reappointed auditors.

SACKE ESTATES.

An ordinary general meeting of shareholders of the Sacke Estates and Mining Company, Ltd., was held in the General Mining Buildings on May 29th. Sir George Albu, who presided, said:—Gentlemen,—The profit and loss account for the past year shows that the revenue of your company from interest, rents and other sources amounted to £2,908, whilst the administration and general expenditure was £1,190, thus leaving a gross profit of £1,716. On the other hand, it was found necessary, in order to bring down the book value of some of the investments to the market prices ruling at the close of the year, to write off depreciation to the extent of £6,401, leaving the total value of the investments on the basis of the Stock Exchange prices at the 31st December last at £26,435. In addition, the company possesses cash and cash assets to the amount of £38,093, and the stands and buildings in Commissioner Street, standing in the books at a cost of £7,473 but the market value of which is considerably less. In reiterating the remarks made from the chair at the two previous annual meetings as to the inadvisability of realising in a hurry, I may say that the investments include a fairly large holding of shares and debentures of the Cinderella Consolidated Gold Mines, Ltd. The Cinderella property is closed down at present, but an independent report has just been made by Mr. G. A. Denny, the well-known mining engineer, which throws a much more favourable light on the position and prospects of the mine than would appear from the records and reports of the company at the time active operations were suspended some two and a half years ago. I feel confident that the asset represented by your interest in that company will appreciate in value at a later date.

The report and accounts were adopted. Messrs. Arthur French and H. W. Dalton were re-elected to the directorate.

Messrs. Douglas, Low and Co. and A. Eckart-Beckmann were reappointed auditors.

NEW STEYN GOLD MINES.

Presiding at the ordinary general meeting of shareholders of the New Steyn Estate Gold Mines, Ltd., held on May 29 afternoon in General Mining Buildings, Sir George Albu said:—Gentlemen,—The accounts for the past year show that both the expenditure and income have decreased as compared with the previous twelve months. The outlays in respect of licences, mynnacht, rents, etc., reflect a saving of £1,600, consequent chiefly on the abandonment of the two detached blocks of claims, very far distant from

the outcrop, to which reference was made at the annual meeting last year. As we are freehold owners of the farms on which the claims in question are situated, it naturally follows that the half share of licences accruing to us as owners must be also affected, so long as the ground is not taken up by other people; consequently our revenue from this source for the year under review exhibits a decrease of about £1,000, of which, however, a portion is due to the fact that claims held by other persons have also been allowed to lapse. The net result for the year, from a financial point of view, is that there was an excess of expenditure over revenue of £1,582, as against a corresponding figure of £2,242 for 1914. The balance sheet shows practically no change from that submitted at the close of the previous year; at the 31st December last the funds on fixed deposit and on current accounts amounted to £50,651, of which £30,000 has since been invested in British Treasury Bills. I am unable to report any movement in the direction of active work on your property, which could only be undertaken (with any material result and advantage) after the provision of a very considerable amount of additional working capital—a matter of impossibility in such times as these. I may say, however, that even if it should subsequently be found difficult or advisable to work the property as a separate entity, it is bound at a later date to enter into the sphere of active operations, as it lies immediately under or adjoining the producing mines of the Roodepoort district. In this connection the greatly improved values now being met with in the lower levels of the Kimberley main section of the Roodepoort United Company on the eastern boundary of your property may have an important bearing.

The report and accounts were adopted. Messrs. Leopold Albu and Arthur French were re-elected directors.

Messrs. Douglas, Low and Co. and J. N. Webb were reappointed auditors.

CLOVERFIELD MINES.

Mr. W. H. Dawe presided at the annual meeting of shareholders of the Cloverfield Mines, Ltd., and the others present were Messrs. S. H. van Diggelen, V. J. Ronkelti, A. G. Gill, O. Scheurmann, and W. H. B. Frank. The report and accounts were adopted on the motion of the Chairman, and Messrs. C. S. Goldmann and W. H. Dawe were re-elected to the board of directors. Messrs. C. L. Andersson and Co. and Messrs. F. W. Diamond and English were reappointed auditors.

VOGELSTRAUIS DEEP.

At the Vogelstruis Consolidated Deep annual meeting, Mr. W. H. Dawe presided, and the others who attended were Messrs. O. Scheurmann, A. G. Gill, W. H. B. Frank, J. Morisse, J. H. Ryan, with the secretary, Mr. H. G. L. Panchaud. The report and accounts were adopted, and the retiring directors were re-elected:—Messrs. W. H. Dawe, C. S. Goldmann, M.P., W. T. Graham, J. H. Ryan, A. G. Gill, and W. H. B. Frank. Messrs. C. L. Andersson and Co., and Messrs. F. W. Diamond and English were reappointed auditors.

NEW KLEINFONTEIN.

The twentieth ordinary general meeting of shareholders of the New Kleinfontein Company, Ltd., was held at 11 a.m. on May 27, in the boardroom, National Bank Buildings, Col. Dalrymple presiding. There were also present Messrs. A. G. Gill, E. H. Read, W. J. Gan, H. W. Anderson, W. Ross,

W. H. B. Frank, J. F. Fergusson, E. J. Way, Col. C. A. C. Tremer, J. E. Grieseson, F. C. Scriven, E. Bulman, W. T. Birch, R. H. Lawrence, C. Rowe, J. A. P. Gibb, L. Nava, and Geo. W. Austin, acting secretary.

The Chairman said:—We have now to consider the report of the directors for the year ended 31st December, 1915, together with the audited statements of account dealing with the same period. Taking the accounts first, you will see that the profit for the year was £267,103, to which must be added the balance unappropriated as at 31st December, 1914, namely £20,463, making a total of £287,566 for appropriation, which has been dealt with as follows:—Dividends, £115,154; taxation, £28,841; interest, £9,566; capital expenditure, £117,307; directors' special remuneration on payment of dividend, £2,000; leaving a balance carried forward of £14,698. The balance sheet shows current liabilities, amounting to £136,538, against which we had cash in hand and gold in transit, £101,398, leaving a deficit of £35,140. Against this deficit, the stock of stores in hand, including goods in transit, was valued at £36,662, and the amount owing to the company by sundry debtors was £6,722. The stock of stores in hand was approximately double the stock which, in pre-war days, it was found necessary to carry, and has since risen to over £53,000, the large stock being necessary as a factor of safety in order to ensure continuous running. Capital loan account, representing the amount lent by your company's bankers and other lenders to the Benoni company, and taken over by your company on the absorption of that company, figures at £175,000, which amount is due to be repaid in five annual instalments, starting in 1925.

A Year's Development.

Now, with regard to operations at the mine, the eastern subsidiary shaft was sunk 372 feet during the year, and very little further sinking will be required in order to negotiate the ground, in its immediate neighbourhood, to our southernmost boundary. No. 2, or the main shaft of the New Kleinfontein Company proper, was sunk 140 feet, and has now reached its full depth; as, owing to its having encountered an extensive down-throw fault, which has displaced the reef, mining beyond this depth will be more economical from No. 1 shaft. No sinking has been carried out in Nos. 3, 4, and 5 shafts. The main incline from the bottom of No. 7, or Apex shaft, was sunk a further 302 feet, and from the plane of the 6th level, which has now been reached, the sinking of the subsidiary incline shaft across the strike of the reef, will now be commenced. The total development accomplished in all sections during the year amounted to 25,701 feet, of which 15,235 feet was in the old Kleinfontein or eastern section; 4,017 feet in the Benoni or central section; and 6,399 feet in the Apex or western section. Approximately five miles of underground development work. The average value of the ore exposed in the main reef and upper main reef on a mining basis was 4.88 dwts. over 58.78 inches. The payable ore reserves at the close of the year were estimated at 2,866,941 tons, having an average value of 5.54 dwts. over a mining width of 59.22 inches. As compared with the reserves at the end of 1914, this shows a decrease of 23,790 tons, with a decrease in value of .07 dwt., but an increase in width of 1.04 inches. The reclamation of ore from the old Kleinfontein workings has continued in the eastern section, and it is estimated that 156,360 tons of payable ore have been

put through the mill during the year from this source. You will notice from the manager's report that this represents a reduction, as compared with the tonnage obtained last year, and that, as the areas left for reclamation are becoming exhausted, the figure is likely to be reduced still further in succeeding years. No work has been done in the Orient or No. 0 shaft or the workings connected with it. The 22nd level east from No. 1 shaft, which will ultimately effect a connection with the Orient workings, has been pushed on, and the linking up should be completed towards the end of the current year. The 20th level haulage has made steady progress during the year, and we hope to have an electric locomotive operating within two or three months. This will facilitate the transport of ore to the main bins at No. 2 or the central shaft.

Increased Costs.

Preparations for putting sand down the mine were carried out during the year, and a commencement was made in September. The quantity for the first few months was small, but has gradually been increasing, and it now about 16,000 tons per month. The total to date amounts to 45,000 tons, and this has had the effect of steadying up the dangerous portions of the mine on the eastern side of No. 2 shaft. The question of dust allaying and efficient ventilation of the mine has had the constant attention of your board and an amount of £2,500 has been allocated to meet expenditure on this account in the New Kleinfontein section for the current year. Ventilation in the Apex section has been greatly improved in consequence of the completion of the connection between No. 6 and No. 7 shafts in May last. With regard to the reduction works, the tonnage milled was 636,150 tons, compared with 601,000 tons for the previous year, an improvement of 35,150 tons, or approximately 3,000 tons per month. The total gold won was 195,821 fine ounces, valued at £831,983 gross, or £815,520 net, after deduction of realisation charges. The recovery was 6.156 dwts., representing an extraction of 96.27 per cent., as compared with 6.279 dwts. and 95.29 per cent. for the previous year. The grade mill was lower than last year's, consequently the net revenue per ton of 25s. 7.6d. reflects a decrease of 8.492d. Working costs, however, at 17s. 2.9d. show a reduction of 4.3d., thus giving on balance a reduction in the profit of 4.2d. per ton. The reduction in the working costs is the more satisfactory when we take into consideration the causes tending to increase costs. For instance, we have the ever-increasing price of stores and the payment of dependents of employees who have joined the forces. A few examples of the increase in cost of stores will be of interest. Cyanide of sodium cost £9 3s. 2d. a case before the war; it now costs £12 1s. 6d. Mercury cost £7 13s. 2d. per bottle, and the price has now risen to £14 2s. 8d. Zinc, which could be bought for 3 3s. 6d. per lb., now costs 9.8d. per lb. Timber, iron, and steel have gone up enormously, and we have recently had to pay £21 10s. per ton for rails which in pre-war days cost £12 per ton. These examples will be sufficient to show you the extraordinary rise in price of almost every article of stores for consumption on the mines, and I may say that, taking the actual stores under the heading of working costs for the months of January, February and March of this year, a careful comparison between the prices paid in these months and the prices which would have been paid prior to the war, shows that the increase amounts to £1,968 per month, or 9.1d. per ton milled. The pay to dependents of men on active service, taken over the same three months, average £612 per month, or 2.8d. per ton milled. The costs of realisation of our gold have also gone up very considerably, and a comparison of these costs for the years 1913-14-15 is as follows:—1913, 3.8d. per ton milled; 1914, 4.0d. per ton milled; 1915, 6.2d. per ton milled. Calculating on the ounces produced, we find that realisation charges represent, at per ounce, in—1913, 11.6s.; 1914, 1s. 0.8d.; 1915, 1s. 8.1d. The fluctuations from time to time with the fluctuations of freight, insurance, etc., but the present charge is estimated at 1s. 8.6d. per ounce. It will thus be seen that the cost

of this item has increased by 76 per cent. Generally speaking, we estimate that through increase of costs or reduction of revenue (due to increased cost of realisation) the company is now being penalised to the extent of 1s. 8d. per ton, as compared with pre-war conditions. Therefore on, say, a tonnage of 50,000 our distributable profit is reduced by over £4,000 per month.

New Plant.

The reduction works ran smoothly throughout the year, an average of 200 stamps having run for 346 days. The work of renovating the Kleinfontein mill, which has now been in progress for some years, has in a measure been delayed owing to the difficulty in obtaining materials. As, however, most of the urgent work is now completed we have no anxiety on account of this delay. Capital expenditure amounted to £117,306, made up as follows:—Kleinfontein Section: Shafts, £10,243; equipment, £1,352—total, £11,600. Apex-Benoni Sections: Shafts, £2,070; development, £43,073; equipment, £47,425; pumping and maintenance, £13,138—£105,706; total, £117,306. Since the latter part of the year good progress has been made with the Benoni reduction works. You will recollect that at the last meeting we forecasted that this additional milling installation would probably be ready to commence operations in about 15 months from the date of that meeting, or by, say, the middle of August next. The delivery of the plant has called for the continual attention of your board, and every possible effort has been made to expedite the delivery of the various parts from the manufacturers. The difficulties and risks, as you can well understand, have been great, but I am glad to say that, with one or two minor exceptions, for which temporary arrangements can be made, if necessary, the whole is now in the country, and the erection should be completed in the course of three or four weeks. Our present estimate therefore is, that, provided a sufficiency of native labour is available, the plant will be ready to start operations early in July. I regret the necessity of making the above proviso, but whereas during the latter part of last year, and the early part of this, the industry had so much labour that it was found necessary by the Native Recruiting Corporation to suspend recruiting in some districts of the native territories, the corporation is now finding difficulty in meeting the requirements of its members, a position which we had not contemplated. In view of the fact that your company needs about 2,100 additional natives to adequately meet the requirements of your increased milling installation, it is with some anxiety that your board is urging on the corporation the necessity for a considerable increase in our native labour force, in the early part of June at the very latest. In speaking of the completion of this plant, we may congratulate the management on the way in which the costs of erection have been kept down, in spite of the very great advance in the price of all materials since the estimates were originally framed. This would have been impossible had not Mr. Hutt and his staff succeeded in working a great deal of framing, materials, etc., from the old plant into the new.

The Apex Section.

Now with regard to the operations on the Apex section, on which the future success of your company will mainly depend, the heavy capital expenditure incurred in shaft sinking and development, perhaps calls for some explanation of the policy of the board, as regards the opening up of this section. When this large property, equal to 1,115 claims, was first acquired, the necessity for extensive advance development work was fore-shadowed, and it was this which your directors had in mind when they endeavoured to increase the capital of the

[illegible]

As many of our employees who have not gone to the front, owing to the necessity of keeping the mine working, I wish to draw your attention to the fact that by means of voluntary deductions from their wages, they have contributed since the commencement of the war no less than £7,843 to the various war funds, and I am sure you will agree with me that they are to be congratulated on this magnificent support. Although we anticipate that the new reduction works, which will be capable of treating 25,000 tons per month, will commence running in July next, I wish to warn shareholders that they must not expect immediate results from this plant. Experience tells us that during the first three or four months of running a new plant a very great amount of gold is absorbed by the plant; and, unless we are in a position to counteract this, by putting high grade ore through

On the question of the re-election of the retiring directors, Messrs. J. H. Ryan and E. H. Read, Mr. D. Anderson, supported by Mr. Birch, said he understood

that Mr. Ryan was not a largely-interested shareholder in the company, and he had thought that some more responsible shareholder would have been nominated.

The Chairman remarked that it was perhaps advisable that he should express his views in regard to the appointment of directors. A man was appointed to a board of directors on account of his capacity for looking after the affairs of the company. The question of representing large interests of course was important. Mr. Ryan had been on the board of the company for many years. He had been a very diligent director, and a man with much knowledge in connection with company administration. The board felt that the co-operation of Mr. Ryan was in the best interests of the company. After all, the appointment of directors rested with shareholders. The manner of election was laid down. There had been no other nomination, and therefore no other discussion was necessary. Messrs. Ryan and Read had been proposed and seconded, and he must put their election to the meeting.

The re-election of Messrs. Ryan and Read was agreed to and Messrs. F. W. Diamond and English and C. L. Andersson and Co. were reappointed auditors.

NEW GEDULD DEEP, LIMITED.

The statement submitted by Mr. E. Mansfield on May 26 at the annual meeting of the Geduld Deep, Limited, showed the company to be in a very sound position. There were also present:—Messrs. H. S. Bothwell, H. Hargreaves, G. C. Fitzpatrick, J. O. Reid, and Dundas Simpson. The number of shares represented at the meeting was 125,596.

In moving the adoption of the report and statement of accounts, which were adopted unanimously, Mr. Mansfield said:—

The statement of accounts shows a profit for the period of £2,068 19s. 5d. This figure is a slight improvement on the results of the previous year's trading. That it fails to reflect the considerable improvement which has set in in the company's affairs since the last annual meeting of shareholders is due to the board's cautious habit of disregarding all profits, however well assured, until actually banked in hard cash. The report accompanying the accounts is a better index to the real estate business put through during the year, and the figures there given prove that the township which we have held for so many years has now become a live asset and a very substantial revenue earner. You will note it shows that proceeds of stands sold during 1915 totalled £4,325, as compared with an amount of £1,000 for the previous year. As most of the sales occurred towards the end of the year the bulk of the proceeds will come to credit of profit and loss in the next balance sheet.

I am glad to be able to add that since the accounts were completed business has continued to expand. In the first quarter of the current year we had already topped the figure of £4,325 recorded for the whole of 1915, and from January 1 to date we have sold 119 stands for a total of £8,872 10s., an amount equal to 50 per cent. on our issued capital, and practically all of which, after deducting agent's commission, represents available profit. Your township is luckily so situated as to be the natural residential and business centre of that section of the far East Rand which is attracting so much attention at the present time. Judging by the experience of other mining centres on the Reef, we may reasonably expect to find our township values improve very materially as the district continues to grow in activity and population, and your board may soon have to give its serious attention to the question of securing a higher scale of prices from future purchasers.

With regard to our main asset—172 gold mining claims on Geduld—I can add very little to what you already know. We are still awaiting the advent of capital for opening up unworked but practically proved properties such as ours. Since our last meeting there has been a further big increase in the market capitalisation of the

two neighbouring mines, namely, Geduld Proprietary Mines, to the north of your minepacht, and Springs Mines, to the south. That is a fact of very cheerful significance to Geduld Deep shareholders, and its bearing on the merits of our ground has been fully confirmed by a valuation of the minepacht recently prepared for the board by a well-known and extremely conservative mining expert who is consulting engineer to one of the principal mining houses on the Rand.

Reverting to the accounts you will notice that cash and cash assets amounted to substantially the same as last year, i.e., a little under £27,000, equalling 90 per cent. of the issued capital of the company. Out of this sum falls to be paid the dividend of 12½ per cent., which has been declared payable to shareholders registered as at April 29 last.

Far East Possibilities.

In seconding the motion Mr. Simpson said:—I can only endorse what the chairman has stated regarding our gold minepacht and township properties on the far East Rand having become live and valuable assets. The value of the 561 stands unsold at December 31 last would work out to, roughly, 3s. a share, taking them at the present average of £75 a stand, and allowing nothing for the prospect of appreciation in price as the district develops. Cash in hand, after allowing for the dividend, equals a further 1s. 6d. or 1s. 7d. per share. That gives us a value of 4s. 6d. per share, exclusive of our mining ground, which obviously cannot be assessed so exactly as the cash and township assets. However, if you put the value of our minepacht at only one-third of the market value per claim of the mine to the south of our property—making full deductions for all cash expended to date on that mine—then you get a further 5s. per share as the value of your mining ground alone. Whether that is too high a figure or very much too low time will prove, but it appears to me a conservative estimate for the district we are in. Shareholders would do well to read the Government Mining Engineer's exhaustive report on these far East Rand areas. It is clear that when the Government is willing to permit on favourable terms the exploitation of the huge undeveloped, but practically proved, gold fields of the far East Rand an enormous impetus will be given to mining enterprise on these fields, thousands of workmen will find ready employment, and an enormous amount of capital will find a safe and lucrative investment, with advantage to its owners and to the country it helps to develop. In conclusion, and speaking as by far the largest shareholder in the company, I must record my appreciation of the great amount of time and work given by the board, and especially by your chairman, to the affairs of your company. The successful running of the township in particular requires a very great deal of attention and detailed work, which is out of all proportion to the remuneration received.

THE NIGEL.

The twenty-seventh ordinary general meeting of shareholders in the Nigel Gold Mining Company was held in the Company's office, Maritzburg, on May 25. Mr. L. Line, J.P., presided, and there were also present: Messrs. W. J. O'Brien, P. E. Payn, A. O. Kufal, W. J. Shaw, G. J. Macfarlane, A. Fox, J. H. Templeton, H. J. Hendry, D. Robb, F. Terry, D. M. Dixon, and D. Weighton (secretary).

The directors stated, in the course of their annual report, that there had been no change in the capital of the company since the date of the last report.

The profit and loss accounts showed an available balance of £60,443 5s. 2d., which had been applied as follows:—Dividend, No. 37, 5 per cent., £11,155 6s.; Transvaal profits tax, £172 10s.; South African in-

come tax, £212 1s. 8d.; balance to next year, £46,908 1s. 6d.

The report continued:—During the first four months of the year under review profits averaged £2,609 per month, and even for the first six months the average was £2,846, but in August the profit declined to £200, and in September, October, and December a loss was made, November showing a small profit.

The immediate cause of this was the exhaustion of the payable ore in the western section of the mine earner than was anticipated, a general fall in grade, and the great difficulty in obtaining sufficient high grade ore from the other sections of the mine owing to the extremely poor results of development during the last two years.

The scheme for the exploitation of the upper claims of the Marais Nigel ground and other claims further north by means of an incline shaft, which was referred to by the Chairman at the last annual meeting, was approved by the board, and some preliminary work was done, but operations were suspended owing to the whole of the compressed air being required in driving for the new shoot. It is intended to recommence sinking the shaft as soon as a new compressor, which has just been purchased, has been installed.

In moving the adoption of the report and the accounts, the Chairman said:—

Gentlemen,—it is again my duty to submit for your consideration and adoption the balance-sheet and profit and loss accounts; also the directors and auditors' reports for the year ended December 31, 1915. The accounts are drawn up in the usual simple form, and require little comment from me. It will be noted the gross revenue was £169,363 9s. 5d., against £216,498 14s. 1d. for the previous year—a decrease of £22,135 4s. 8d. The expenditure was £14,818 9s. 4d., against £166,147 1s. 2d.—a decrease of £11,328 11s. 10d. The profit for the year was £14,545 0s. 1d., against £3,351 12s. 10d., a decrease of £11,193 12s. 10d. The value of stores on hand was much higher than usual, viz., £13,537, against £7,632 for the previous year—an increase of £5,905. This is accounted for by the large stocks purchased in advance of immediate requirements to provide against any eventual dislocation of ordinary sources of supply.

DEVELOPMENT.

I mentioned in my remarks at the last annual meeting that a very large proportion of the ground west of No. 3 shaft was nearing exhaustion, and I now regret to state that to-day practically all payable ore in that large section of the mine has been stowed out. The only portion not yet worked out is the shoot south of No. 12 shaft, which may yet yield a fair tonnage of ore, but, as has been remarked by me before, this shoot has never given great satisfaction its whole area being very disturbed, payable values patchy, and, generally speaking, I do not look with confidence to getting much benefit from this remaining portion of the western section of the mine. By permission of the Government mining authorities we are engaged at present in removing the payable boundary pillars between our exhausted shoots and the Sub Nigel Company's ground. I would draw attention to that portion of the manager's report dealing with No. 13 shaft, which, at the end of last year, had been sunk two hundred and sixty feet with poor results. The latest report, however, is, that the shaft is now down over four hundred feet and values have considerably improved. I do not think I need deal further with the western section of the property, and will pass on to the eastern section, where our chief efforts are centred, and upon which our hopes are

based. At the end of 1914 the manager was of opinion a new shoot of payable value had been struck in the 11th level east of No. 3 shaft. This proved to be correct, as the strike was subsequently confirmed in the 14th and 22nd levels. This was very good news indeed, as had the pay values not continued lower down the position of the mine would have been precarious. Having proved the shoot in the 11th, 14th and 22nd levels, the next question was how to develop it in the speediest and most economical manner possible. The distance of the shoot in the 11th level from our nearest hauling shaft, No. 3, is some 3,250 feet, a very long way to tram ore underground, so it was decided to sink the Marais Nigel shaft to the 14th level with a view to economy in handling ore. This shaft is now sunk considerably below the 11th level, its material being provided mostly from the spot. Reverting to the new shoot, we find that as far as it is proved, that is from the 11th to the 22nd levels, it appears to be about 2,300 feet in length, 300 feet in width, and of an average value of 11 dwts. over 36 inches—our present stoping width. Altogether the strike is highly satisfactory, and it is expected that the shoot will extend far below the 22nd level, and probably above the 11th level. Values disclosed so far are of a very encouraging nature, and the manager is hopeful that they will continue throughout the full length and width of the shoot. As to the contents of the shoot it is estimated there are between the 11th and 22nd levels about 172,500 tons of payable ore reserves in other portions of the mine, gives us 272,500 tons of reserves, and, say we crush 12,000 tons a month, we have therefore sufficient ore to keep the mill going for about 22 months. The development of the new shoot is being pushed on as fast as possible, but, of course, an immense amount of work has to be done before any large quantity of ore is opened up for stoping. For some time past it has been apparent that the plant at the central power station has been taxed to its utmost capacity in coping with the work demanded of it, and in order to expedite the development of the new shoot and concurrently sink the incline shaft and carry on operations in the other sections of the mine, we found it imperative that additions to the plant and machinery must be made. The additions required were four more boilers, a more powerful air compressor, another condenser, and some more machine drills, etc., etc. The manager was fortunate enough to procure all these locally for about £5,000, a cost very reasonable indeed. They have all been installed, and are now in operation. I now come to the financial aspect of the situation, and will explain the position as clearly as I can. Owing to the exhaustion of the greater part of the western section of the mine and to the development of payable ore during the last two years falling far short of our expectations, it has been found impossible to run the mine at a profit since last August, except in November, when a small profit was made. In this connection it should be mentioned that for some months back a series of low grade stopes have been instrumental in adversely affecting our returns. It has been suggested to the Board that rather than run the mine at a loss it would be better to shut down the mill and confine operations entirely to development until a profit-earning stage is again resumed. I may

tell you that that aspect of the position received due consideration, but it was decided it would be more economical to keep the mill going even at a loss for a time than to close down, discharge most of the European labour, and a large number of natives (the latter more than likely would never return) and thoroughly disorganise the whole of the works. I do not think there is any doubt at all that our decision was the best policy.

THE LOSS.

So far the loss has not been heavy for any one month, but now that the new compressor, condenser, and machine drills are at work, enabling the manager to accomplish extra development, it is estimated the loss may jump to about £3,000 a month for the period of June, July and August. After August we expect it to gradually decrease, but it is very difficult to arrive at definite figures on account of the many unknown factors which often intrude in the course of development operations, and which may vary estimates very much one way or the other. The manager, however, is of opinion that given average conditions we should commence to make profits in December next. The manager estimates that the loss likely to be incurred during the current year will be £23,200, in addition to which there is the capital outlay of £5,000 already expended on extra plant, and there is also an estimated expenditure of £1,200 during the year in connection with the underground incline shaft to which I referred at the last annual meeting as being in contemplation for exploiting the ground in the upper portion of the Marais Nigel claims, and also as a preliminary to opening up the 300 claims acquired in 1914. Arrangements have been made for sinking the incline shaft concurrently with the development; in fact a considerable amount of preparatory work in connection with the shaft has already been done, but the sum of £1,200 will be the only amount required during the year in this regard. The estimated expenditure to be met during the period January to November, 1916, will, therefore, be £23,200, representing loss on current ore treatment, plus £5,000 for new plant, and £1,200 for the incline shaft, or a total of £29,400. Against this there is the item of sundry revenue derived from claim licences and rents, estimated at not less than £300 a month, or £3,000 for the year, thus reducing the total amount to be provided to £25,800. Having regard to our cash position at December 31, 1915, some anxiety has been expressed as to how the company is to be financed until we reach the profit-earning period. I am glad to be able to say that our bankers, on being approached, readily came to our assistance, and agreed to finance us on very reasonable terms until the debt is liquidated, which, according to the manager's estimate, should be about the middle of 1917. On this point Mr. De Villiers appears somewhat optimistic, but the figures he submitted to the board certainly bear out his views. Such, then, is the position at the moment; but I am bound to warn you that it is only an estimated position, as all calculations are based on the assumption that the new shoot will carry payable values throughout its length and width, and that normal conditions generally will prevail. It is exceedingly difficult to forecast what the position may be in a few years' time. In the light of past experiences we expect to find another

shoot of ore in the ground to the east of the recently discovered shoot, but if we do find one, it will be the last in that area, as it will be very close to the boundary. There remains a considerable portion of the Rand Nigel ground yet untouched, and what is of more importance, we hope, is the block of 351 claims pegged out some time ago. Therefore, although the old Nigel ground which has been so successfully worked for nearly a quarter of a century and has paid 435 per cent., equalling £864,562 in dividends, is nearing the end, the company still possess an enormous extent of property yet to be explored. When I tell you that the area of the Nigel Mynpacht, which has taken over 20 years to work out, is equal to 387 claims, you will realise what a potential asset we hold in the 351 claims I have just referred to. In the Rand Nigel section of the property mining operations are steadily being carried on. Of the 135,100 tons of ore milled during the year, 21,977 tons were drawn from the Rand Nigel claims. The work of development was seriously hampered by numerous obstacles, such as dykes, faults, broken ground, water, etc. In order to economise as much as possible, 101 Rand Nigel claims were dropped at the beginning of the year. Some of them were worked, and others are in unpayable zones. The saving in claim licences is about £40 a month. It is interesting and gratifying to note that the results of the erection of a second tube mill are highly satisfactory; in fact, the mill not only paid for itself in six months; but, in addition, saved us £1,600 in that period. In concluding my remarks, I should mention that, according to reports issued by the Southern Van Ryn Gold Mining Company, referred to by me last year as a syndicate which had pegged out some 700 claims on our farm Varkensfontein, it appears they have struck the Nigel reef in a borehole at 590 feet, and the Van Ryn reef is another hole at 617 feet. The reports state that "the assay results obtained may be considered very encouraging." We wish the new company every success, and should they be fortunate in proving either of the reefs mentioned as carrying payable values, it is very strong evidence that the same conditions will be found in this company's 351 claims, which adjoin those of the company referred to. I would refer to the absence from this meeting of two of the company's directors, viz., Messrs. Hugh Parker and G. E. Greene. Mr. Parker, you will regret to hear, has been seriously ill for some months, and we all hope to see him amongst us again soon. Mr. Greene, who went through the German South-West campaign with the Natal Carbiners, recently joined the 8th Regiment of South Africa Horse, and is now in German East Africa doing his country's work. On behalf of the Board, I desire to place on record our appreciation of the services rendered during the past year by Mr. De Villiers, the manager, and by the mine, head office, and London office staffs. I now formally move: "That the reports and accounts as submitted to this meeting be and are hereby received and adopted."

There were no fresh nominations for membership to the directorate, and the chairman declared Messrs. Hugh Parker, G. E. Greene, and W. J. Shaw re-elected. Messrs. Loram and Baynes were re-appointed auditors, and the remuneration was fixed at 150 guineas.

The meeting then rose.

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HOLDERS OF SHARES TO BEARER SHOULD PRESENT COUPON No. 84 for payment of the above 2/- (Two Shillings) per share at the STANDARD BANK OF SOUTH AFRICA, LTD., Johannesburg Branch, on and after the 1st of July, 1916.

W. A. MARTIN,	} Local Directors.
W. MACFARLANE,	
L. CLARENCE,	
G. S. KEMPIS,	

Johannesburg, 26th May, 1916.

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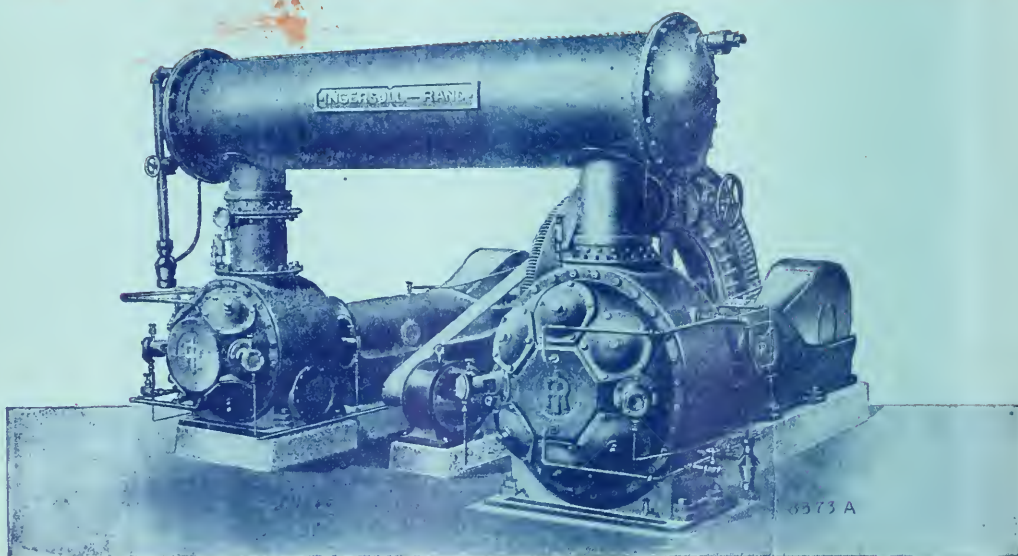
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